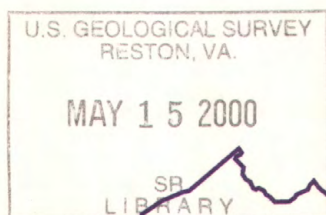


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Water Resources Data Virginia Water Year 1999

Volume 2. Ground-Water Level and Ground-Water Quality Records

Water-Data Report VA-99-2



U.S. Department of the Interior
U.S. Geological Survey

Prepared in cooperation with the
Virginia Department of Environmental
Quality and with other agencies

CALENDAR FOR WATER YEAR 1999

1998

OCTOBER							NOVEMBER							DECEMBER						
S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S
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1999

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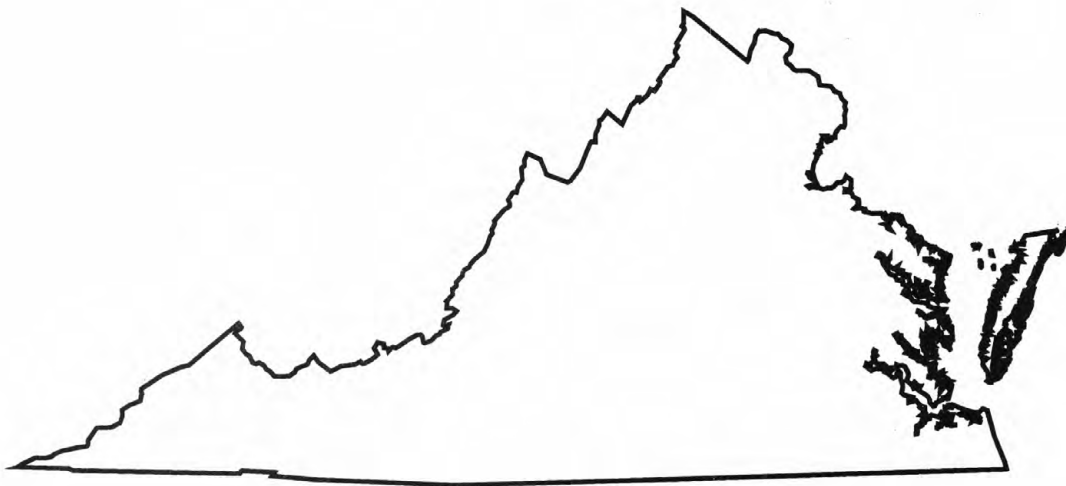
U.S. Department of the Interior
U.S. Geological Survey

Water Resources Data Virginia Water Year 1999

Volume 2. Ground-Water Level and Ground-Water Quality Records

By Roger K. White and Eugene D. Powell

Water-Data Report VA-99-2



Prepared in cooperation with the
Virginia Department of Environmental Quality and with other agencies



U.S. DEPARTMENT OF THE INTERIOR

BRUCE BABBITT, Secretary

U.S. GEOLOGICAL SURVEY

Charles G. Groat, Director

For information on the water program in Virginia write to

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U.S. Geological Survey
1730 East Parham Road
Richmond, Virginia 23228

or

Virginia Department of Environmental Quality
Surface Water Investigations
900 Natural Resource Drive Suite 600
Charlottesville, Virginia 22903

PREFACE

This volume of the annual hydrologic data report of Virginia is one of a series of annual reports that document hydrologic data gathered from the U.S. Geological Survey's and cooperating agencies' surface- and ground-water data-collection networks in each State, Puerto Rico, and the Trust Territories. These records of streamflow, ground-water levels, and water quality provide the hydrologic information needed by State, local, and Federal agencies, and the private sector for developing and managing our Nation's land and water resources. Hydrologic data for Virginia are contained in two volumes:

Volume 1. Surface-Water-Discharge and Surface-Water-Quality Records

Volume 2. Ground-Water-Level and Ground-Water-Quality Records

This report (Volume 2) is the culmination of a concerted effort by dedicated personnel of the U.S. Geological Survey and the Virginia Department of Environmental Quality who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. In addition to the authors, who had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to Geological Survey policy and established guidelines, the following personnel contributed significantly to the collection, computation, processing, and completion of this information:

Dennis W. Adams
Richard J. Ahlin
Donna L. Belval
David P. Brower
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Karl M. Dydak
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Patsy S. Francisco
Thomas L. Gibson
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Daniel A. Nissen
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Dawn M. Valenti
Stephen L. Wheeler
Roger K. White

This report was prepared in cooperation with the State of Virginia and with other agencies under the general supervision of Ward W. Staubitz, District Chief.

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by the Virginia Department of Environmental Quality]

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WATER RESOURCES DATA - VIRGINIA, 1999

VOLUME 2. GROUND-WATER-LEVEL AND GROUND-WATER-QUALITY RECORDS

INTRODUCTION

The Water Resources Division of the U.S. Geological Survey, in cooperation with State agencies, obtains a large amount of data pertaining to the water resources of Virginia each water year. These data, accumulated during many water years, constitute a valuable data base for developing an improved understanding of the water resources of the State. To make these data readily available to interested parties outside the Geological Survey, the data are published annually in this report series entitled "Water Resources Data - Virginia."

This series of annual reports for Virginia began with the 1961 water year with a report that contained only data relating to the quantities of surface water. For the 1964 water year, a similar report was introduced that contained only data relating to water quality. Beginning with the 1975 water year, the report format was changed to present, in one volume, data on quantities of surface water, quality of surface and ground water, and ground-water levels. Beginning with the 1990 water year, the quantity of data to be published made it necessary to present the data in two volumes; Volume 1 encompassed surface-water-discharge and surface-water-quality records and Volume 2 encompassed ground-water-level and ground-water-quality records.

This report is Volume 2 in our 1999 series and includes records of water levels and water quality of ground-water wells. It contains records for water levels at 279 observation wells and water quality at 120 wells. Locations of these wells are shown on figures 4, 5, 6, and 7. The data in this report represent that part of the National Water Data System collected by the U.S. Geological Survey and cooperating State and Federal agencies in Virginia.

Prior to introduction of this series and for several water years concurrent with it, water-resources data for Virginia were published in U.S. Geological Survey Water-Supply Papers. Data on water levels for the 1935 through 1974 water years were published under the title "Ground-Water Levels in the United States." These Water-Supply Papers may be consulted in the libraries of the principal cities of the United States and may be purchased from U.S. Geological Survey, Branch of Information Services, Federal Center, Bldg. 41, Box 25286, Denver, CO 80225.

Publications similar to this report are published annually by the Geological Survey for all States. These official Survey reports have an identification number consisting of the two-letter State abbreviation, the last two digits of the water year, and the volume number. For example, this volume is identified as "U.S. Geological Survey Water-Data Report VA-99-2." For archiving and general distribution, the reports for 1971-74 water years also are identified as water-data reports. These water-data reports are for sale in paper copy or in microfiche by the National Technical Information Service, U.S. Department of Commerce, Springfield, Virginia 22161.

Additional information, including current prices, for ordering specific reports may be obtained from the District Office at the address given on the back of the title page or by telephone (804) 261-2600.

Water resources data, including those provided in water data reports, are available through the World Wide Web on the Internet. The Universal Resource Location (URL) to the Virginia District's home page is:

<http://va.usgs.gov>

COOPERATION

The U.S. Geological Survey and agencies of the State of Virginia have had joint-funding agreements for the collection of water-resource records since 1930. Organizations that assisted in collecting the data in this report through joint-funding agreements with the Survey are:

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY, Dennis H. Treacy, executive director.

CITY OF NEWPORT NEWS, Brian Ramaley, director, Department of Public Utilities.

HAMPTON ROADS PLANNING DISTRICT COMMISSION, Arthur L. Collins, executive director.

Organizations that provided data are acknowledged in station descriptions.

WATER RESOURCES DATA - VIRGINIA, 1999

RECORDS COLLECTED BY THE STATE OF VIRGINIA

In addition to data collected by the U.S. Geological Survey, there are included herein records for 177 index wells operated by the Virginia Department of Environmental Quality. These records are published as provided and are acknowledged in the "REMARKS" paragraph of each individual well. The Virginia Department of Environmental Quality is under the direction of Dennis H. Treacy, executive director. Published material for the ground-water wells is supplied through the Division of Water Program Coordination, Larry G. Lawson, P.E., director.

SUMMARY OF HYDROLOGIC CONDITIONS

Eleven index wells open to water-table aquifers across Virginia were used to summarize the general response of ground-water levels to changes in precipitation and evapotranspiration during the 1999 water year. Two index wells open to confined aquifers of the Coastal Plain of Virginia were used to summarize typical changes in water levels caused by ground-water withdrawals. The locations of the index wells and other observation wells documented in this report are shown in figures 4, 5, and 6.

Water-Table Wells

Average water levels in wells open to the water table show declines because of evapotranspiration during the growing season which begins in March or April in Virginia and generally lasts through September or October (fig. 1). October is the beginning of the water year when water levels begin to rise, if sufficient precipitation is forthcoming. The water levels will continue to rise through the autumn and winter months and recover to the levels of the previous spring, under normal conditions. Departures from this normal seasonal cycle can indicate more persistent trends such as droughts or extended periods of precipitation.

Water levels in all of the index water-table wells were within 1 or 2 ft of average levels at the beginning of October 1998, the beginning of the 1999 water year, with one exception; well 46W175 in Clarke County began the year about 4 ft above its average (fig. 1). Water levels in the two index wells in the southwestern part of the state, 14E40 in Buchanan County and 27F2 in Montgomery County, followed their normal seasonal averages, for-the-most-part, throughout the water year and ended the water year, at the end of September 1999, within 1 ft of their average.

Water levels in most of the other index wells, however, did not follow the normal seasonal cycle but declined below their normal averages in October, November, and December 1998. Most of the state experienced a severe drought during the 1999 water year. Water levels in all of the index water-table wells in the central and eastern parts of the state were below their average levels for much of the year. Water levels in wells 45N1 in Louisa County and 41Q1 in Rockingham County fell below their average levels at the beginning of the water year and remained below average for the rest of the water year, ending with levels far below average. Water levels in two other wells, 41H3 in Buckingham County and 52V2 in Fairfax County set new record lows for extended periods of the water year. The Buckingham County well ended the year with water levels 8 ft below normal and the Fairfax County well ended the year with water levels 7 ft below normal.

The drought persisted throughout much of the state until August when passing rainstorms recharged the water table in some eastern parts of the state. Wells 46W175 in Clark County and 55P9 in Westmoreland County began to rise in August 1999 and returned to normal levels in September at the end of the water year.

Torrential rains from hurricanes Dennis and then Floyd caused extensive and record floods in southeastern Virginia in September 1999. The only two index wells open to the water table in the southeast, 51G1 in Colonial Heights and 58B13 in Suffolk rose rapidly during the rains and ended the year about 3 and 4 ft, respectively, above their normal averages.

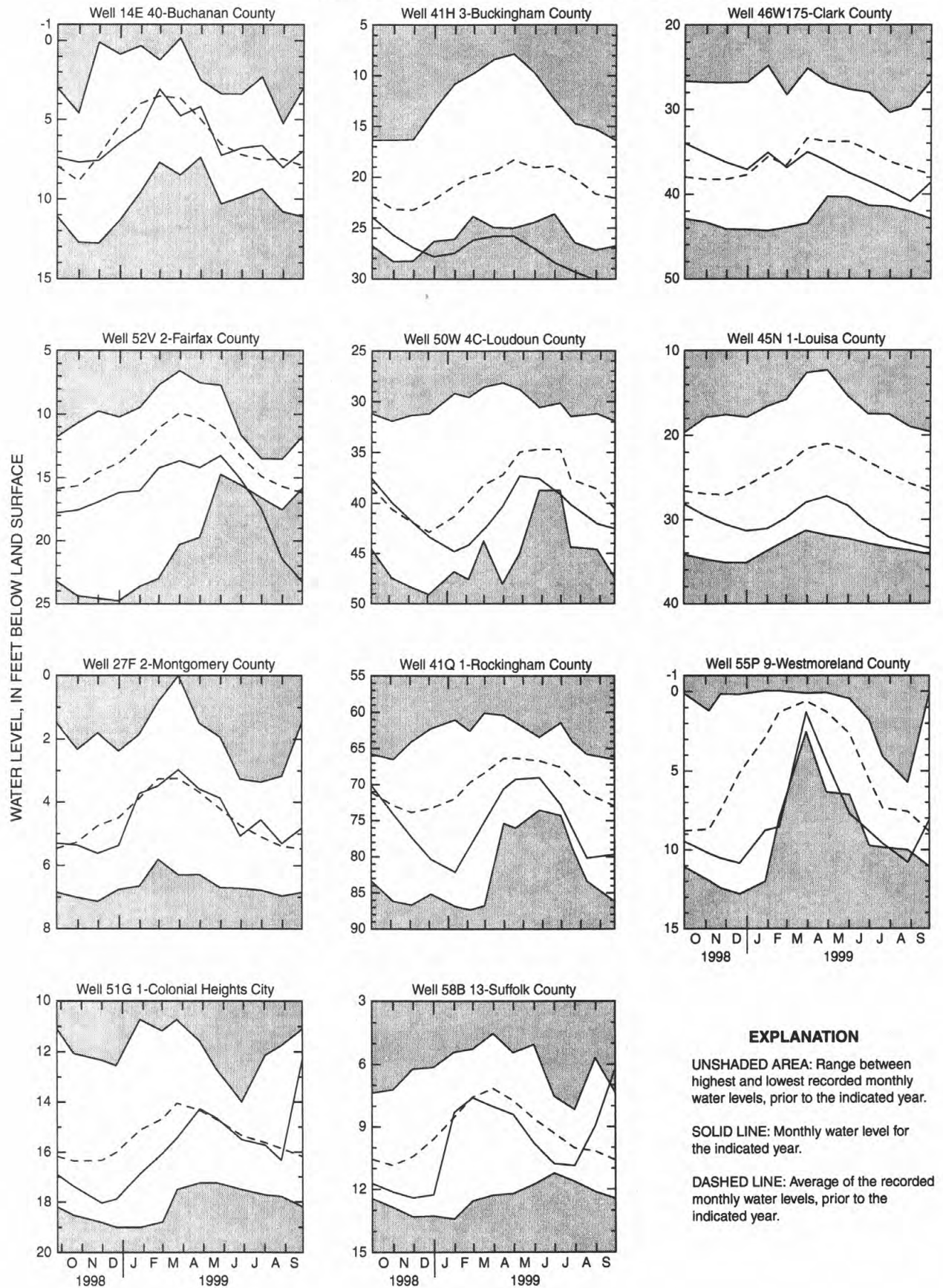


Figure 1. Monthly ground-water levels at index observation wells in water-table aquifers.

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Confined-Coastal Plain Wells

The confined sand aquifers of the Coastal Plain of Virginia are separated by layers of silt and clay. The deep confined aquifers of the Coastal Plain supply water to industrial, municipal, agricultural, and domestic users throughout eastern Virginia and adjoining states. Water levels in most of the confined aquifers of the Coastal Plain of Virginia have declined throughout much of their period of record because of unrestricted flows and ground-water withdrawals by large-capacity pumps. Historic records from wells and from reports of the U.S. Geological Survey indicate that water levels in most of the aquifers of the Coastal Plain of Virginia were much higher during the early years of the 20th century than they are now. In fact, before ground-water withdrawals began, many wells open to the confined aquifers of the Coastal Plain flowed at land surface. Since then, however, water levels have dropped below land surface. Cones of depression around the major pumping centers have coalesced throughout much of Virginia and changes in pumping at any one location can have far-reaching affects.

Water levels in observation wells open to the deep confined aquifers of the Coastal Plain change in response to changing pumpage in and near large-capacity wells and well fields. The amplitude of the water-level response in an observation well is proportional to the proximity of the well to the change in pumpage and proportional to the hydraulic properties of the porous media between the observation well and the change in pumpage. Two index wells, 55B16 in Isle of Wight County and 56H27 in James City County show changes in water levels typical for the deep confined aquifers of the Coastal Plain of Virginia (fig. 2). Long-term records such as these can provide detailed information about the history of water use in Virginia and the impact of ground-water withdrawals on water levels.

Water levels in 55B16 in Isle of Wight County, near Franklin, Va. has incorporated a detailed history of the impact of pumping on the Middle Potomac aquifer for 4 decades. In 1962, shortly after the record for the well began in 1960, the water level in 55B16 rose to a maximum of about 100 ft below land surface (fig. 2). The water levels in 55B16 declined rapidly however throughout the remainder of the 1960's; interrupted only briefly near the end of each water year by a short recovery spike, presumably caused by brief reductions in pumping or possibly temporary shut downs. Overall water levels in 55B16 fell by more than 80 feet during the decade reaching about 185 ft below land surface in 1970.

Except for two very brief recovery spikes in the early 1970's, the water levels fluctuated around 180 ft below land surface from 1970 through 1976 and into 1977. In 1977 and 1978, the water levels in 56H27 fell about 5 to 10 ft reaching 190 ft below land surface for the first time. From 1978 through 1986, the water levels in 55B16 fluctuated between 180 and 195 ft below land surface, but overall the water levels show a steady trend. In 1987 and 1988, however, the water level in 55B16 fell steadily to about 205 ft below land surface, but then recovered to about 195 ft below land surface and held near there for the remainder of 1988, 1989, and into 1990. In 1990, the water level declined again falling 15 ft to 210 ft below land surface for the first time. The water levels in 56H27 remained near 210 ft below land surface from the end of the 1990 water year until 1992; when, the water level dipped to the record low of about 215 ft below land surface. From there, the water level recovered rapidly about 10 ft and from the middle of 1992 through 1998 and into 1999, the water level fluctuated between 195 and 205 ft below land surface, but overall showed another steady trend. However, in September 1999, at the very end of the water year, the water level in well 56H27 rose rapidly 30 ft to 170 ft below land surface; because, flooding from Hurricane Floyd had shut down the high-capacity wells pumping nearby.

Water levels in index well 56H27 in northern James City County record 14 years of water level declines in the Upper Potomac aquifer (fig. 2). The decline was about 21 ft for the period of record; about 1.5 ft per year of uninterrupted and generally steady decline from 1985 to the end of the 1999 water year.

EXPLANATION OF THE RECORDS

The ground-water records published in this report are for the 1999 water year that began October 1, 1998, and ended September 30, 1999. A calendar of the water year is provided on the inside of the front cover. The records contain ground-water-level and ground-water-quality data. The locations of the wells where the data were collected are shown in figures 4, 5, 6, and 7. The following sections of the introductory text are presented to provide users with a more detailed explanation of how the hydrologic data published in this report were collected, analyzed, computed, and arranged for presentation.

Station Identification Numbers

Each well in this report is assigned a unique identification number. This number is unique in that it applies specifically to a given well and to no other. The number usually is assigned when a well is first established and is retained for that well indefinitely. The system used by the U.S. Geological Survey to assign identification numbers for ground-water well sites is based on geographic location. The "latitude-longitude" system is used for wells.

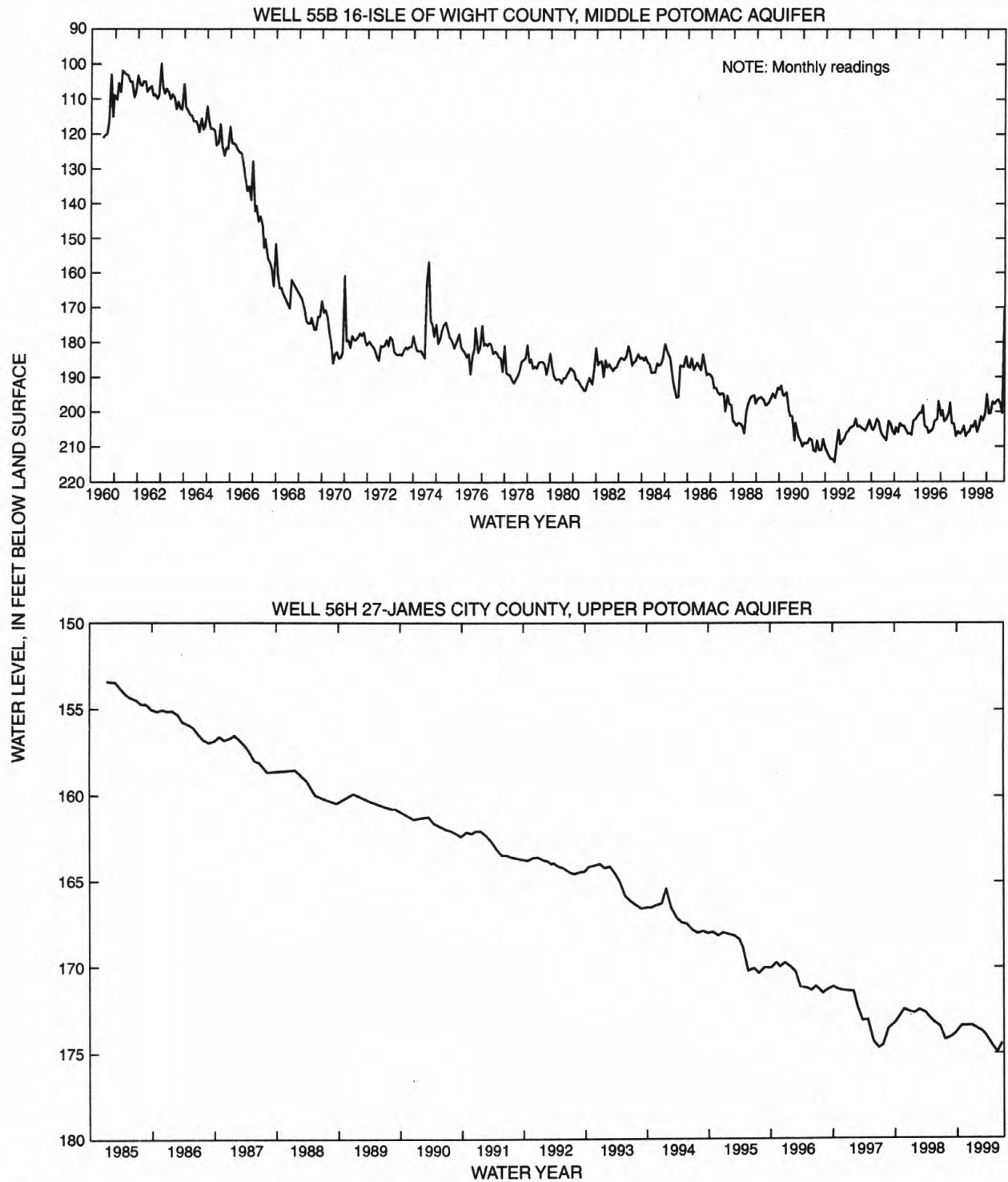


Figure 2. Ground-water levels in selected observation wells in confined Coastal Plain aquifers.

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Latitude-Longitude System

The identification numbers for wells are assigned according to the grid system of latitude and longitude. The number consists of 15 digits. The first six digits denote the degrees, minutes, and seconds of latitude, the next seven digits denote degrees, minutes, and seconds of longitude, and the last two digits (assigned sequentially) identify the wells or other sites within a 1-second grid. This site-identification number, once assigned, is a pure number and has no locational significance. In the rare instance where the initial determination of latitude and longitude are found to be in error, the station will retain its initial identification number; however, its true latitude and longitude will be listed in the LOCATION paragraph of the station description.

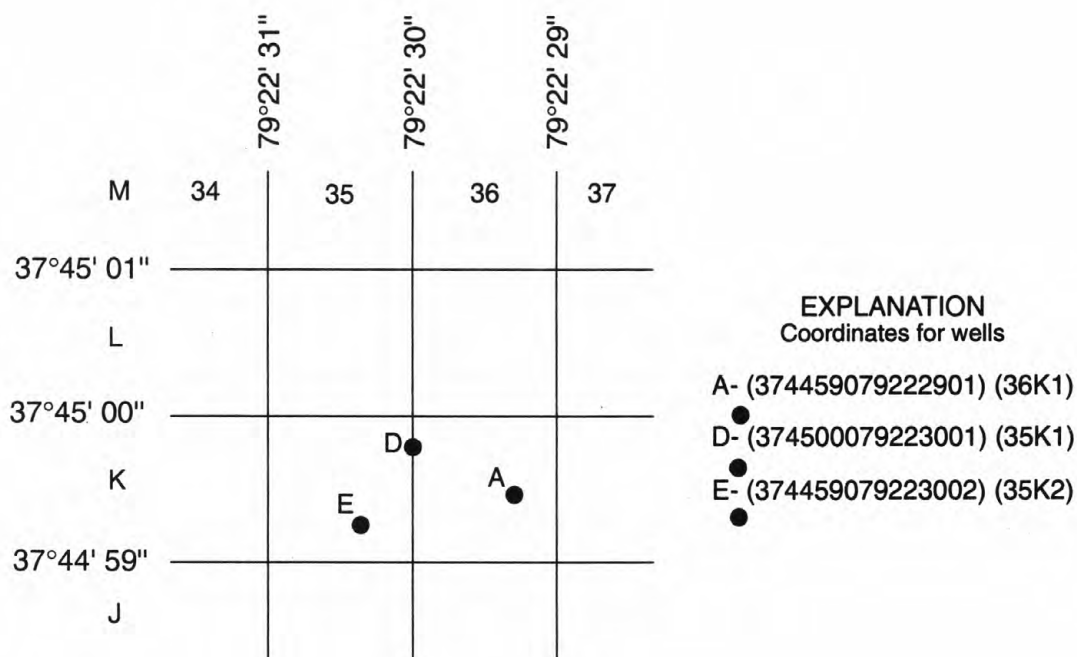


Figure 3. System for numbering wells.

A second well-numbering system used in Virginia utilizes 7 1/2-minute quadrangles within the State. The quadrangles are numbered from west to east, and lettered from south to north, omitting the letters "I" and "O." The designation for each quadrangle is determined by the method "Read Right, Up." Wells are numbered serially within each quadrangle. This local well number is shown immediately after the primary well number.

Well records furnished by the State of Virginia also include the well number that is based on an indexing system used by the Virginia Department of Environmental Quality.

Records of Ground-Water Levels

Only water-level data from a national network of observation wells are given in this report. These data are intended to provide a sampling and historical record of water-level changes in the Nation's most important aquifers. Locations of the observation wells in this network in Virginia are shown in figures 4, 5, 6, and 7.

Data Collection and Computation

Measurements of water levels are made in many types of wells under varying conditions, but the methods of measurement are standardized to the extent possible. The equipment and measuring techniques used at each observation well ensure that measurements at each well are of consistent accuracy and reliability.

Tables of water-level data are presented by counties arranged in alphabetical order. The prime identification number for a given well is the 15-digit number that appears in the upper left corner of the table. The secondary identification number is the local well number, an alphanumeric number, derived from the township-range location of the well.

Water-level records are obtained from direct measurements with a steel tape or from the graph or punched tape of a water-stage recorder. The water-level measurements in this report are given in feet with reference to land-surface datum (lsd). Land-surface datum is a datum plane that is approximately at land surface at each well. If known, the elevation of the land-surface datum is given in the well description. The height of the measuring point (MP) above or below land-surface datum is given in each well description. Water levels in wells equipped with recording gages are reported for every fifth day and the end of each month (eom).

Water levels are reported to as many significant figures as can be justified by the local conditions. For example, in a measurement of a depth to water of several hundred feet, the error of determining the absolute value of the total depth to water may be a few tenths of a foot, whereas the error in determining the net change of water level between successive measurements may be only a hundredth or a few hundredths of a foot. For lesser depths to water, the accuracy is greater. Accordingly, most measurements are reported to a hundredth of a foot, but some are given to a tenth of a foot or a larger unit.

Data Presentation

Each well record consists of three parts, the station description, the data table of water levels observed during the current water year, and a graph of the water levels for the current water year or other selected period. The description of the well is presented first through use of descriptive headings preceding the tabular data. The comments to follow clarify information presented under the various headings.

LOCATION.--This paragraph follows the well-identification number and reports the latitude and longitude (given in degrees, minutes, and seconds); a landline location designation; the hydrologic-unit number; the distance and direction from a geographic point of reference; and the owner's name.

AQUIFER.--This entry designates by name (if a name exists) and geologic age the aquifer(s) open to the well.

WELL CHARACTERISTICS.--This entry describes the well in terms of depth, diameter, casing depth and/or screened interval, method of construction, use, and additional information such as casing breaks, collapsed screen, and other changes since construction.

INSTRUMENTATION.--This paragraph provides information on both the frequency of measurement and the collection method used, allowing the user to better evaluate the reported water-level extremes by knowing whether they are based on weekly, monthly, or some other frequency of measurement.

DATUM.--This entry describes both the measuring point and the land-surface elevation at the well. The measuring point is described physically (such as top of collar, notch in top of casing, plug in pump base and so on), and in relation to land surface (such as 1.3 ft above land-surface datum). The elevation of the land-surface datum is described in feet above (or below) sea level; it is reported with a precision depending on the method of determination.

REMARKS.--This entry describes factors that may influence the water level in a well or the measurement of the water level. It should identify wells that also are water-quality observation wells, and may be used to acknowledge the assistance of local (non-Survey) observers.

PERIOD OF RECORD.--This entry indicates the period for which there are published records for the well. It reports the month and year of the start of publication of water-level records by the U.S. Geological Survey and the words "to current year" if the records are to be continued into the following year. Periods for which water-level records are available, but are not published by the Geological Survey, may be noted.

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EXTREMES FOR PERIOD OF RECORD.--This entry contains the highest and lowest water levels of the period of published record, with respect to land-surface datum, and the dates of their occurrence.

A table of water levels follows the station description for each well. Water levels are reported in feet below land-surface datum and all taped measurements of water level are listed. For wells equipped with recorders, only abbreviated tables are published; generally, only water-level lows are listed for every fifth day and at the end of the month (eom). The highest and lowest water levels of the water year and their dates of occurrence are shown on a line below the abbreviated table. Because all values are not published for wells with recorders, the extremes may be values that are not listed in the table. Missing records are indicated by dashes in place of the water level. A hydrograph for a selected period of record follows each water-level table.

Records of Ground-Water Quality

Records of ground-water quality in this report differ from other types of records in that, for most sampling sites, they consist of only one set of measurements for the water year. The quality of ground water ordinarily changes only slowly; therefore, for most general purposes, one annual sampling, or only a few samples taken at infrequent intervals during the year, is sufficient. Frequent measurement of the same constituents is not necessary unless one is concerned with a particular problem, such as monitoring for trends in nitrate concentration. In the special cases where the quality of ground water may change more rapidly, more frequent measurements are made to identify the nature of the changes.

Data Collection and Computation

The records of ground-water quality in this report were obtained mostly as a part of special studies in specific areas. Consequently, a number of chemical analyses are presented for some counties but none are presented for others. As a result, the records for this year, by themselves, do not provide a balanced view of ground-water quality Statewide. Such a view can be attained only by considering records for this year in context with similar records obtained for these and other counties in earlier years.

Most methods for collecting and analyzing water samples are described in the "U.S. Geological Survey Techniques of Water-Resources Investigations" publications referred to in the "On-site Measurements and Sample Collection" and the "Laboratory Measurements" sections in this data report. In addition, the TWRI book 1, Chapter D2, describes guidelines for the collection and field analysis of ground-water samples for selected unstable constituents. The values reported in this report represent water-quality conditions at the time of sampling as much as possible, consistent with available sampling techniques and methods of analysis. These methods are consistent with ASTM standards and generally follow ISO standards. All samples were obtained by trained personnel. The wells sampled were pumped long enough to assure that the water collected came directly from the aquifer and had not stood for a long time in the well casing where it would have been exposed to the atmosphere and to the material, possibly metal, comprising the casings.

Data Presentation

The records of ground-water quality are published in a section titled QUALITY OF GROUND WATER immediately following the ground-water-level records. Data for quality of ground water are listed alphabetically by County and are identified by well number. The prime identification number for wells sampled is the 15-digit number derived from the latitude-longitude locations. No descriptive statements are given for ground-water-quality records; however, the well number, depth of well, date of sampling, and other pertinent data are given in the table containing the chemical analyses of the ground water.

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Remark Codes

The following remark codes may appear with the ground-water-quality data in this report:

PRINTED OUTPUT	REMARK
E	Estimated value
>	Actual value is known to be greater than the value shown
<	Actual value is known to be less than the value shown
K	Results based on colony count outside the acceptance range (non-ideal colony count)
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted)
D	Biological organism count equal to or greater than 15 percent (dominant)
V	Analyte was detected in both the environmental sample and the associated blanks.
&	Biological organism estimated as dominant

Water Quality-Control Data

Data generated from quality-control (QC) samples are a requisite for evaluating the quality of the sampling and processing techniques as well as data from the actual samples themselves. Without QC data, environmental sample data cannot be adequately interpreted because the errors associated with the sample data are unknown. The various types of QC samples collected by this district are described in the following section. Procedures have been established for the storage of water-quality-control data within the USGS. These procedures allow for storage of all derived QC data and are identified so that they can be related to corresponding environmental samples.

Blank Samples

Blank samples are collected and analyzed to ensure that environmental samples have not been contaminated by the overall data-collection process. The blank solution used to develop specific types of blank samples is a solution that is free of the analytes of interest. Any measured value signal in a blank sample for an analyte (a specific component measured in a chemical analysis) that was absent in the blank solution is believed to be due to contamination. There are many types of blank samples possible, each designed to segregate a different part of the overall data-collection process. The types of blank samples collected in this district are:

Field blank - a blank solution that is subjected to all aspects of sample collection, field processing, preservation, transportation, and laboratory handling as an environmental sample.

Trip blank - a blank solution that is put in the same type of bottle used for an environmental sample and kept with the set of sample bottles before and after sample collection.

Equipment blank - a blank solution that is processed through all equipment used for collecting and processing an environmental sample (similar to a field blank but normally done in the more controlled conditions of the office).

Sampler blank - a blank solution that is poured or pumped through the same field sampler used for collecting an environmental sample.

Filter blank - a blank solution that is filtered in the same manner and through the same filter apparatus used for an environmental sample.

Splitter blank - a blank solution that is mixed and separated using a field splitter in the same manner and through the same apparatus used for an environmental sample.

Preservation blank - a blank solution that is treated with the sampler preservatives used for an environmental sample.

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Reference Samples

Reference material is a solution or material prepared by a laboratory whose composition is certified for one or more properties so that it can be used to assess a measurement method. Samples of reference material are submitted for analysis to ensure that an analytical method is accurate for the known properties of the reference material. Generally, the selected reference material properties are similar to the environmental sample properties.

Replicate Samples

Replicate samples are a set of environmental samples collected in a manner such that the samples are thought to be essentially identical in composition. Replicate is the general case for which a duplicate is the special case consisting of two samples. Replicate samples are collected and analyzed to establish the amount of variability in the data contributed by some part of the collection and analytical process. There are many types of replicate samples possible, each of which may yield slightly different results in a dynamic hydrologic setting, such as a flowing stream. The types of replicate samples collected in this district are:

Sequential samples - a type of replicate sample in which the samples are collected one after the other, typically over a short time.

Split sample - a type of replicate sample in which a sample is split into subsamples contemporaneous in time and space.

Spike Samples

Spike samples are samples to which known quantities of a solution with one or more well-established analyte concentrations have been added. These samples are analyzed to determine the extent of matrix interference or degradation on the analyte concentration during sample processing and analysis.

ACCESS TO USGS WATER DATA

The USGS provides near real-time stage and discharge data for many of the gaging stations equipped with the necessary telemetry and historic daily-mean and peak-flow discharge data for most current or discontinued gaging stations through the world wide web (WWW). These data may be accessed at:

<http://va.water.usgs.gov>

Some water-quality and ground-water data also are available through the WWW. In addition, data can be provided in various machine-readable formats on magnetic tape or 3-1/2 inch floppy disk. Information about the availability of specific types of data or products, and user charges, can be obtained locally from each of the Water Resources Division District Offices (See address on the back of the title page.)

DEFINITION OF TERMS

Terms related to water quality and other hydrologic data, as used in this report, are defined below. See also table for converting English units to International System (SI) Units on the inside of the back cover.

Acid neutralizing capacity (ANC) is the equivalent sum of all bases or base-producing materials, solutes plus particulates, in an aqueous system that can be titrated with acid to an equivalence point.

Acre-foot (AC-FT, acre-ft) is the quantity of water required to cover 1 acre to a depth of 1 foot and is equivalent to 43,560 cubic feet or about 326,000 gallons or 1,233 cubic meters.

Adenosine triphosphate (ATP) is an organic, phosphate-rich, compound important in the transfer of energy in organisms. Its central role in living cells makes it an excellent indicator of the presence of living material in water. A measurement of ATP therefore provides a sensitive and rapid estimate of biomass. ATP is reported in micrograms per liter of the original water sample.

Algae are mostly aquatic single-celled, colonial, or multi-celled plants, containing chlorophyll and lacking roots, stems, and leaves.

Algal growth potential (AGP) is the maximum algal dry weight biomass that can be produced in a natural water sample under standardized laboratory conditions. The growth potential is the algal biomass present at stationary phase and is expressed as milligrams dry weight of algae produced per liter of sample.

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Alkalinity is the capacity of solutes in an aqueous system to neutralize acid.

Bacteria are microscopic unicellular organisms, typically spherical, rodlike, or spiral and threadlike in shape, often clumped into colonies. Some bacteria cause disease, while others perform an essential role in nature in the recycling of materials; for example, by decomposing organic matter into a form available for reuse by plants.

Total coliform bacteria are a particular group of bacteria that are used as indicators of possible sewage pollution. This group includes coliforms that inhabit the intestine of warm-blooded animals and those that inhabit soils. They are characterized as aerobic or facultative anaerobic, gram-negative, nonspore-forming, rod-shaped bacteria which ferment lactose with gas formation within 48 hours at 35-C. In the laboratory these bacteria are defined as all the organisms that produce colonies with a golden-green metallic sheen within 24 hours when incubated at 35-C plus or minus 1.0-C on M-Endo medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal coliform bacteria are bacteria that are present in the intestine or feces of warm-blooded animals. They are often used as indicators of the sanitary quality of the water. In the laboratory they are defined as all organisms that produce blue colonies within 24 hours when incubated at 44.5-C plus or minus 0.2-C on M-FC medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Fecal streptococcal bacteria are bacteria found also in the intestine of warm-blooded animals. Their presence in water is considered to verify fecal pollution. They are characterized as Gram-positive, cocci bacteria which are capable of growth in brain-heart infusion broth. In the laboratory they are defined as all the organisms which produce red or pink colonies within 48 hours at 35-C plus or minus 1.0-C on KF-streptococcus medium (nutrient medium for bacterial growth). Their concentrations are expressed as number of colonies per 100 mL of sample.

Enterococcus bacteria are commonly found in the feces of humans and other warm-blooded animals. Although some strains are ubiquitous and not related to fecal pollution, the presence of enterococci in water is an indication of fecal pollution and the possible presence of enteric pathogens. Enterococcus bacteria are those bacteria which produce pink to red colonies with black or reddish-brown precipitate after incubation at 41-C on mE agar and subsequent transfer to EIA medium. Enterococci include *Streptococcus faecalis*, *Streptococcus faecium*, *Streptococcus avium*, and their variants.

Bedload is the sediment which moves along in essentially continuous contact with the streambed by rolling, sliding, and making brief excursions into the flow a few diameters above the bed.

Bed material is the sediment mixture of which a streambed, lake, pond, reservoir, or estuary bottom is composed.

Benthic invertebrates are invertebrate animals inhabiting the bottoms of lakes, streams, and other water bodies. They are useful as indicators of water quality.

Biochemical oxygen demand (BOD) is a measure of the quantity of dissolved oxygen, in milligrams per liter, necessary for the decomposition of organic matter by micro-organisms, such as bacteria.

Biomass is the amount of living matter present at any given time, expressed as the mass per unit area or volume of habitat.

Ash mass is the mass or amount of residue present after the residue from the dry mass determination has been ashed in a muffle furnace at a temperature of 500-C for 1 hour. The ash mass values of zooplankton and phytoplankton are expressed in grams per cubic meter (g/m³), and periphyton and benthic organisms in grams per square mile (g/m²).

Dry mass refers to the mass of residue present after drying in an oven at 105-C for zooplankton and periphyton, until the mass remains unchanged. This mass represents the total organic matter, ash and sediment, in the sample. Dry-mass values are expressed in the same units as ash mass.

Organic mass or volatile mass of the living substance is the difference between the dry mass and ash mass and represents the actual mass of the living matter. The organic mass is expressed in the same units as for ash mass and dry mass.

Wet mass is the mass of living matter plus contained water.

Bottom material: See Bed material.

Cells/volume refers to the number of cells of any organism which is counted by using a microscope and grid or counting cell. Many planktonic organisms are multicelled and are counted according to the number of contained cells per sample, usually milliliters (mL) or liters (L).

Cfs-day is the volume of water represented by a flow of 1 cubic foot per second for 24 hours. It is equivalent to 86,400 cubic feet, approximately 1.9835 acre-feet, about 646,000 gallons, or 2,447 cubic meters.

Chemical oxygen demand (COD) is a measure of the chemically oxidizable material in the water and furnishes an approximation of the amount of organic and reducing material present. The determined value may correlate with BOD or with carbonaceous organic pollution from sewage or industrial wastes.

Chlorophyll refers to the green pigments of plants. Chlorophyll a and b are the two most common green pigments in plants.

Color unit is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Color is expressed in units of the platinum-cobalt scale.

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Contents is the volume of water in a reservoir or lake. Unless otherwise indicated, volume is computed on the basis of a level pool and does not include bank storage.

Continuing-record station is a specified site which meets one or all conditions listed:

1. When chemical samples are collected daily or monthly for 10 or more months during the water year.
2. When water temperature records include observations taken one or more times daily.
3. When sediment discharge records include periods for which sediment loads are computed and are considered to be representative of the runoff for the water year.

Control designates a feature downstream from the gage that determines the stage-discharge relation at the gage. This feature may be a natural constriction of the channel, an artificial structure, or a uniform cross section over a long reach of the channel.

Cubic foot per second (FT³/S, ft³/s) is the rate of discharge representing a volume of 1 cubic foot passing a given point during 1 second and is equivalent to approximately 7.48 gallons per second or 448.8 gallons per minute.

Discharge is the volume of water (or more broadly, volume of fluid plus suspended sediment), that passes a given point within a given period of time.

Mean discharge (MEAN) is the arithmetic mean of individual daily mean discharges during a specific period.

Instantaneous discharge is the discharge at a particular instant of time.

Annual 7-day minimum is the lowest mean discharge for 7 consecutive days for a calendar year or a water year. Note that most low-flow frequency analyses of annual 7-day minimum flows use a climatic year (April 1-March 31). The date shown in the summary statistics table is the initial date of the 7-day period. (This value should not be confused with the 7-day 10-year low-flow statistic.)

Dissolved refers to that material in a representative water sample which passes through a 0.45 um membrane filter. This is a convenient operational definition used by Federal agencies that collect water data. Determinations of "dissolved" constituents are made on subsamples of the filtrate.

Dissolved-solids concentration of water is determined either analytically by the "residue-on-evaporation" method, or mathematically by totaling the concentrations of individual constituents reported in a comprehensive chemical analysis. During the analytical determination of dissolved solids, the bicarbonate (generally a major dissolved component of water) is converted to carbonate. Therefore, in the mathematical calculation of dissolved-solids concentration, the bicarbonate value, in milligrams per liter, is multiplied by 0.492 to reflect the change.

Drainage area of a stream at a specific location is that area, measured in a horizontal plane, enclosed by a topographic divide from which direct surface runoff from precipitation normally drains by gravity into the stream above the specified point. Figures of drainage area given herein include all closed basins, or noncontributing areas, within the area unless otherwise specified.

Drainage basin is a part of the surface of the earth that is occupied by a drainage system, which consists of a surface stream or a body of impounded surface water together with all tributary surface streams and bodies of impounded surface water.

Extractable organic halides (EOX) are organic compounds which contain halogen atoms such as chlorine. These organic compounds are semi-volatile and extractable by ethyl acetate from air-dried stream bottom sediments. The ethyl acetate extract is combusted, and the concentration is determined by microcoulometric determination of the halides formed. The concentration is reported as micrograms of chlorine per gram of the dry weight of the stream bottom sediments.

Hardness of water is a physical-chemical characteristic that is commonly recognized by the increased quantity of soap required to produce lather. It is computed as the sum of equivalents of polyvalent cations and is expressed as the equivalent concentration of calcium carbonate (CaCO₃).

High tide is the maximum height reached by each rising tide.

Hydrologic Benchmark Network is a network of 50 sites in small drainage basins around the country whose purpose is to provide consistent data on the hydrology, including water quality, and related factors in representative undeveloped watersheds nationwide, and to provide analyses on a continuing basis to compare and contrast conditions observed in basins more obviously affected by human activities.

Hydrologic unit is a geographic area representing part or all of a surface drainage basin or distinct hydrologic feature as delineated by the Office of Water Data Coordination on the State Hydrologic Unit Maps; each hydrologic unit is identified by an 8-digit number.

Low tide is the minimum height reached by each falling tide.

Mean high tide is the average of all high tides over a specified period.

Mean low tide is the average of all low tides over a specified period.

Mean water level is the average of all tides over a specified period.

Membrane filter is a thin microporous material of specific pore size used to filter bacteria, algae, and other very small particles from water.

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Metamorphic stage refers to the stage of development that an organism exhibits during its transformation from an immature form to an adult form. This developmental process exists for most insects, and the degree of difference from the immature stage to the adult form varies from relatively slight to pronounced, with many intermediates. Examples of metamorphic stages of insects are egg-larva-adult or egg-nymph-adult.

Methylene blue active substances (MBAS) are apparent detergents. The determination depends on the formation of a blue color when methylene blue dye reacts with synthetic anionic detergent compounds.

Micrograms per gram (mg/g) is a unit expressing the concentration of a chemical constituent as the mass (micrograms) of the element per unit mass (gram) of material analyzed.

Micrograms per liter (UG/L, mg/L) is a unit expressing the concentration of chemical constituents in solution as mass (micrograms) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter.

Microsiemens per centimeter (μ S/cm, US/CM) is a unit expressing the amount of electrical conductivity of a solution as measured between opposite faces of a centimeter cube of solution at a specified temperature. Siemens is the International System of units nomenclature. It is synonymous with mhos and is the reciprocal of resistance in ohms.

Milligrams per liter (MG/L, mg/L) is a unit for expressing the concentration of chemical constituents in solution. Milligrams per liter represents the mass of solute per unit volume (liter) of water. Concentration of suspended sediment also is expressed in mg/L and is based on the mass of dry sediment per liter of water-sediment mixture.

Most probable number (MPN) is an index of the number of coliform bacteria that, more probably than any other number, would give the results shown by the laboratory examination; it is not an actual enumeration. It is determined from the distribution of gas-positive cultures among multiple inoculated tubes.

Multiple-plate samplers are artificial substrates of known surface area used for obtaining benthic-invertebrate samples. They consist of a series of spaced, hardboard plates on an eyebolt.

National Geodetic Vertical Datum of 1929 (NGVD of 1929) is a geodetic datum derived from a general adjustment of the first order level nets of both the United States and Canada. It was formerly called "Sea Level Datum of 1929" or "mean sea level" in this series of reports. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.

National Stream-Quality Accounting Network (NASQAN) monitors the water quality of large rivers within four of the Nation's largest river basins--the Mississippi, Columbia, Colorado, and Rio Grande. The network consists of 39 stations. Samples are collected with sufficient frequency that the flux of a wide range of constituents can be estimated. The objective of NASQAN is to characterize the water quality of these large rivers by measuring concentration and mass transport of a wide range of dissolved and suspended constituents, including nutrients, major ions, dissolved and sediment-bound heavy metals, common pesticides, and inorganic and organic forms of carbon. This information will be used (1) to describe the long-term trends and changes in concentration and transport of these constituents; (2) to test findings of the National Water-Quality Assessment Program (NAWQA); (3) to characterize processes unique to large-river systems such as storage and re-mobilization of sediments and associated contaminants; and (4) to refine existing estimates of off-continent transport of water, sediment, and chemicals for assessing human effects on the world's oceans and for determining global cycles of carbon, nutrients, and other chemicals.

The National Atmospheric Deposition Program/ National Trends Network (NADP/NTN) provides continuous measurement and assessment of the chemical climate of precipitation throughout the United States. As the lead federal agency, the USGS works together with over 100 organizations to accomplish the following objectives; (1) Provide a long-term, spatial and temporal record of atmospheric deposition generated from a network of 191 precipitation chemistry monitoring sites. (2) Provide the mechanism to evaluate the effectiveness of the significant reduction in SO₂ emissions that began in 1995 as implementation of the Clean Air Act Amendments (CAAA) occurred. (3) Provide the scientific basis and nationwide evaluation mechanism for implementation of the Phase II CAAA emission reductions for SO₂ and NO_x scheduled to begin in 2000.

The National Water-Quality Assessment (NAWQA) Program of the U.S. Geological Survey is a long-term program with goals to describe the status and trends of water-quality conditions for a large, representative part of the Nation's ground- and surface-water resources; provide an improved understanding of the primary natural and human factors affecting these observed conditions and trends; and provide information that supports development and evaluation of management, regulatory, and monitoring decisions by other agencies.

Organism is any living entity.

Organism count/area refers to the number of organisms collected and enumerated in a sample and adjusted to the number per area habitat, usually square meter (m²), acre, or hectare. Periphyton, benthic organisms, and macrophytes are expressed in these terms.

Organism count/volume refers to the number of organisms collected and enumerated in a sample and adjusted to the number per sample volume, usually milliliter (mL) or liter (L). Numbers of planktonic organisms can be expressed in these terms.

Total organism count is the total number of organisms collected and enumerated in any particular sample.

Parameter Code is a 5-digit number used in the U.S. Geological Survey computerized data system, National Water Information System (NWIS), to uniquely identify a specific constituent. The codes used in NWIS are the same as those used in the U.S. Environmental Protection Agency data system, STORET. The Environmental Protection Agency assigns and approves all requests for new codes.

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Partial-record station is a particular site where limited streamflow and/or water-quality data are collected systematically over a period of years for use in hydrologic analyses.

Particle size is the diameter, in millimeters (mm), of a particle determined by either sieve or sedimentation methods. Sedimentation methods (pipet, bottom-withdrawal tube, visual-accumulation tube) determine fall diameter of particles in either distilled water (chemically dispersed) or in native water (the river water at the time and point of sampling).

Particle-size classification used in this report agrees with the recommendation made by the American Geophysical Union Subcommittee on Sediment Terminology. The classification is as follows:

Classification	Size (mm)	Method of analysis
Clay	0.00024 - 0.004	Sedimentation
Silt	.004 - .062	Sedimentation
Sand	.062 - 2.0	Sedimentation/sieve
Gravel	2.0 - 64.0	Sieve

The partial-size distributions given in this report are not necessarily representative of all particles in transport in the stream. Most of the organic matter is removed, and the sample is subjected to mechanical and chemical dispersion before analysis in distilled water. Chemical dispersion is not used for native-water analysis.

Percent composition is a unit for expressing the ratio of a particular part of a sample or population to the total sample or population, in terms of types, numbers, mass, or volume.

Periphyton is the assemblage of microorganisms attached to and living upon submerged solid surfaces. While primarily consisting of algae, they also include bacteria, fungi, protozoa, rotifers, and other small organisms.

Pesticides are chemical compounds used to control undesirable organisms. Major categories of pesticides include insecticides, miticides, fungicides, herbicides, and rodenticides.

Picocurie (PC, pCi) is one trillionth (1×10^{-12}) of the amount of radioactivity represented by a curie (Ci). A curie is the amount of radioactivity that yields 3.7×10^{10} radioactive disintegrations per second. A picocurie yields 2.22 dpm (disintegrations per minute).

Plankton is the community of suspended, floating, or weakly swimming organisms that live in the open water of lakes and rivers.

Phytoplankton is the plant part of the plankton. They are usually microscopic and their movement is subject to the water currents. Phytoplankton growth is dependent upon solar radiation and nutrient substances. Because they are able to incorporate as well as release materials to the surrounding water, the phytoplankton have a profound effect upon the quality of the water. They are the primary food producers in the aquatic environment and are commonly known as algae.

Blue-green algae are a group of phytoplankton organisms having a blue pigment, in addition to the green pigment called chlorophyll. Blue-green algae often cause nuisance conditions in water.

Diatoms are the unicellular or colonial algae having a siliceous shell. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

Green algae have chlorophyll pigments similar in color to those of higher green plants. Some forms produce algae mats or floating "moss" in lakes. Their concentrations are expressed as number of cells per milliliter (cells/mL) of sample.

Zooplankton is the animal part of the plankton. Zooplankton are capable of extensive movements within the water column and are often large enough to be seen with the unaided eye. Zooplankton are secondary consumers feeding upon bacteria, phytoplankton, and detritus. Because they are the grazers in the aquatic environment, the zooplankton are a vital part of the aquatic food web. The zooplankton community is dominated by small crustaceans and rotifers.

Polychlorinated biphenyls (PCB's) are industrial chemicals that are mixtures of chlorinated biphenyl compounds having various percentages of chlorine. They are similar in structure to organochlorine insecticides.

Primary productivity is a measure of the rate at which new organic matter is formed and accumulated through photosynthetic and chemosynthetic activity of producer organisms (chiefly, green plants). The rate of primary production is estimated by measuring the amount of oxygen released (oxygen method) or the amount of carbon assimilated by the plants (carbon method).

Milligrams of carbon per area or volume per unit time [$\text{mg C}/(\text{m}^2/\text{time})$] for periphyton and macrophytes and [$\text{mg C}/(\text{m}^3/\text{time})$] for phytoplankton are units for expressing primary productivity. They define the amount of carbon dioxide consumed as measured by radioactive carbon (carbon 14). The carbon 14 method is of greater sensitivity than the oxygen light and dark bottle method and is preferred for use in unenriched waters. Unit time may be either the hour or day, depending on the incubation period.

Milligrams of oxygen per area or volume per unit time [$\text{mg O}_2/(\text{m}^2/\text{time})$] for periphyton and macrophytes and [$\text{mg O}_2/(\text{m}^3/\text{time})$] for phytoplankton are the units for expressing primary productivity. They define production and respiration rates as estimated from changes in the measured dissolved-oxygen concentration. The oxygen light and dark bottle method is preferred if the rate of primary production is sufficient for accurate measurements to be made within 24 hours. Unit time may be either the hour or day, depending on the incubation period.

Radiochemical program is a network of regularly sampled water-quality stations where samples are collected to be analyzed for radioisotopes. The streams that are sampled represent major drainage basins in the conterminous United States.

Recoverable from bottom material is the amount of a given constituent that is in solution after a representative sample of bottom material has been digested by a method (usually using an acid or mixture of acids) that results in dissolution of readily soluble substances. Complete dissolution of all bottom material is not achieved by the digestion treatment and thus the determination represents less than the total amount (that is, less than 95 percent) of the constituent in the sample. To achieve comparability of analytical data, equivalent digestion procedures would be required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Return period is the average time interval between occurrences of a hydrological event of a given or greater magnitude, usually expressed in years. May also be called recurrence interval.

River mile as used herein, is the distance above the mouth of Delaware Bay, measured along the center line of the navigation channel or the main stem of the Delaware River. River mile data were furnished by the Delaware River Basin Commission.

Runoff in inches (IN., in.) shows the depth to which the drainage area would be covered if all the runoff for a given time period were uniformly distributed on it.

Sea level: In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929) -- a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

Sediment is solid material that originates mostly from disintegrated rocks and is transported by, suspended in, or deposited from water; it includes chemical and biochemical precipitates and decomposed organic material, such as humus. The quantity, characteristics, and cause of the occurrence of sediment in streams are influenced by environmental factors. Some major factors are degree of slope, length of slope, soil characteristics, land usage, and quantity and intensity of precipitation.

Bed load is the sediment that is transported in a stream by rolling, sliding, or skipping along the bed and very close to it. In this report, bed load is considered to consist of particles in transit within 0.25 ft of the streambed.

Bed load discharge (tons per day) is the quantity of bed load measured by dry weight that moves past a section as bed load in a given time.

Suspended sediment is the sediment that at any given time is maintained in suspension by the upward components of turbulent currents or that exists in suspension as a colloid.

Suspended-sediment concentration is the velocity-weighted concentration of suspended sediment in the sampled zone (from the water surface to a point approximately 0.3 ft above the bed) expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). The entire sample is used for the analysis.

Mean concentration is the time-weighted concentration of suspended sediment passing a stream section during a 24-hour day.

Suspended-sediment discharge (tons/day) is the rate at which dry mass of sediment passes a section of a stream or is the quantity of sediment, as measured by dry mass or volume, that passes a section in a given time. It is calculated in units of tons per day as follows: concentration (mg/L) x discharge (ft³/s) x 0.0027.

Suspended-sediment load is a general term that refers to material in suspension. It is not synonymous with either discharge or concentration.

Suspended total residue at 105 Deg. C concentration is the concentration of suspended sediment in the sampled zone expressed as milligrams of dry sediment per liter of water-sediment mixture (mg/L). A small aliquot of the sample is used for the analysis.

Total sediment discharge (tons/day) is the sum of the suspended-sediment discharge and the bed-load discharge. It is the total quantity of sediment, as measured by dry mass or volume, that passes a section during a given time.

Total sediment load or total load is a term which refers to the total sediment (bed load plus suspended-sediment load) that is in transport. It is not synonymous with total sediment discharge.

Sodium-adsorption-ratio (SAR) is the expression of relative activity of sodium ions in exchange reactions within soil and is an index of sodium or alkali hazard to the soil. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Solute is any substance that is dissolved in water.

Specific conductance is a measure of the ability of a water to conduct an electrical current. It is expressed in microsiemens per centimeter at 25-C. Specific conductance is related to the type and concentration of ions in solution and can be used for approximating the dissolved-solids content of the water. Commonly, the concentration of dissolved solids (in milligrams per liter) is from 55 to 75 percent of the specific conductance (in microsiemens). This relation is not constant from stream to stream, and it may vary in the same source with changes in the composition of the water.

Stage-discharge relation is the relation between gage height (stage) and volume of water, per unit of time, flowing in a channel.

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Streamflow is the discharge that occurs in a natural channel. Although the term "discharge" can be applied to the flow of a canal, the word "streamflow" uniquely describes the discharge in a surface stream course. The term "streamflow" is more general than "runoff" as streamflow may be applied to discharge whether or not it is affected by diversion or regulation.

Substrate is the physical surface upon which an organism lives.

Natural substrate refers to any naturally occurring immersed or submersed solid surface, such as a rock or tree, upon which an organism lives.

Artificial substrate is a device which is purposely placed in a stream or lake for colonization or organisms. The artificial substrate simplifies the community structure by standardizing the substrate from which each sample is taken. Examples of artificial substrates are basket samplers (made of wire cages filled with clean streamside rocks) and multiplate samplers (made of hardboard) for benthic organism collection, and plexiglass strips for periphyton collection.

Surface area of a lake is that area outlined on the latest USGS topographic map as the boundary of the lake and measured by a planimeter in acres. In localities not covered by topographic maps, the areas are computed from the best maps available at the time planimetered. All areas shown are those for the stage when the planimetered map was made.

Surficial bed material is the part (0.1 to 0.2 ft) of the bed material that is sampled using U.S. Series Bed-Material Samplers.

Suspended (as used in tables of chemical analyses) refers to the amount (concentration) of undissolved material in a water-sediment mixture. It is associated with the material retained on a 0.45-micrometer filter.

Suspended, recoverable is the amount of a given constituent that is in solution after the part of a representative water-suspended sediment sample that is retained on a 0.45 um membrane filter has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all the particulate matter is not achieved by the digestion treatment and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Determinations of "suspended, recoverable" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total recoverable concentrations of the constituent.

Suspended, total is the total amount of a given constituent in the part of a representative water-suspended sediment sample that is retained on a 0.45 um membrane filter. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent determined. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to determine when the results should be reported as "suspended, total."

Determinations of "suspended, total" constituents are made either by analyzing portions of the material collected on the filter or, more commonly, by difference, based on determinations of (1) dissolved and (2) total concentrations of the constituent.

Synoptic Studies Short-term investigations of specific water-quality conditions during selected seasonal or hydrologic periods to provide improved spatial resolution for critical water-quality conditions. For the period and conditions sampled, they assess the spatial distribution of selected water-quality conditions in relation to causative factors, such as land use and contaminant sources.

Taxonomy is the division of biology concerned with the classification and naming of organisms. The classification of organisms is based upon a hierarchical scheme beginning with Kingdom and ending with Species at the base. The higher the classification level, the fewer features the organisms have in common. For example, the taxonomy of a particular mayfly, *Hexagenia limbata*, is the following:

Kingdom:	Animal
Phylum:	Arthropoda
Class:	Insecta
Order:	Ephemeroptera
Family:	Ephemeridae
Genus:	Hexagenia
Species:	Hexagenia Limbata

Time-weighted average is computed by multiplying the number of days in the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the total number of days. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the stream each day for the year.

Tons per acre-foot indicates the dry mass of dissolved solids in 1 acre-foot of water. It is computed by multiplying the concentration of the constituent, in milligrams per liter, by 0.00136.

Tons per day (T/DAY) is the quantity of a substance in solution or suspension that passes a stream section during a 24-hour period.

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Total is the total amount of a given constituent in a representative water-suspended sediment sample, regardless of the constituent's physical or chemical form. This term is used only when the analytical procedure assures measurement of at least 95 percent of the constituent present in both the dissolved and suspended phases of the sample. A knowledge of the expected form of the constituent in the sample, as well as the analytical methodology used, is required to judge when the results should be reported as "total." (Note that the word "total" does double duty here, indicating both that the sample consists of a water-suspended sediment mixture and that the analytical method determined all of the constituent in the sample.)

Total discharge is the total quantity of any individual constituent, as measured by dry mass or volume, that passes through a stream cross-section per unit of time. This term needs to be qualified, such as "total sediment discharge," "total chloride discharge," and so on.

Total, recoverable is the amount of a given constituent that is in solution after a representative water-suspended sediment sample has been digested by a method (usually using a dilute acid solution) that results in dissolution of only readily soluble substances. Complete dissolution of all particulate matter is not achieved by the digestion treatment, and thus the determination represents something less than the "total" amount (that is, less than 95 percent) of the constituent present in the dissolved and suspended phases of the sample. To achieve comparability of analytical data, equivalent digestion procedures are required of all laboratories performing such analyses because different digestion procedures are likely to produce different analytical results.

Tritium Network is a network of stations which has been established to provide baseline information on the occurrence of tritium in the Nation's surface waters. In addition to the surface-water stations in the network, tritium data are also obtained at a number of precipitation stations. The purpose of the precipitation stations is to provide an estimate sufficient for hydrologic studies of the tritium input to the United States.

Volatile Organic Compounds (VOCs) are organic compounds that can be isolated from the water phase of a sample by purging the water sample with inert gas, such as helium, and subsequently analyzed by gas chromatography. Many VOCs are man-made chemicals that are used and produced in the manufacture of paints, adhesives, petroleum products, pharmaceuticals, and refrigerants. They are often components of fuels, solvents, hydraulic fluids, paint thinners, and dry cleaning agents commonly used in urban settings. VOC contamination of drinking-water supplies is a human health concern because many are toxic and are known or suspected human carcinogens (U.S. Environmental Protection Agency, 1996).

Water year in U.S. Geological Survey reports dealing with surface-water supply is the 12-month period October 1 through September 30. The water year is designated by the calendar year in which it ends and which includes 9 of the 12 months. Thus, the year ending September 30, 1985, is called the "1985 water year."

WDR is used as an abbreviation for "Water-Data Report" in the REVISED RECORDS paragraph to refer to State annual hydrologic-data reports (WRD was used as an abbreviation for "Water-Resources Data" in reports published prior to 1976).

Weighted average is used in this report to indicate discharge-weighted average. It is computed by multiplying the discharge for a sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all the water passing a given location during the water year after thorough mixing in the reservoir.

WSP is used as an abbreviation for "Water-Supply Paper" in reference to previously published reports.

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PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS

The U.S. Geological Survey publishes a series of manuals describing procedures for planning and conducting specialized work in water-resources investigations. The material is grouped under major subject headings called books and is further divided into sections and chapters. For example, Section A of Book 3 (Applications of Hydraulics) pertains to surface water. The chapter, the unit of publication, is limited to a narrow field of subject matter. This format permits flexibility in revision and publication as the need arises.

The reports listed below are for sale by the U.S. Geological Survey, Branch of Information Services, Box 25286, Federal Center, Denver, Colorado 80225 (authorized agent of the Superintendent of Documents, Government Printing Office). Prepayment is required. Remittance should be sent by check or money order payable to the U.S. Geological Survey. Prices are not included because they are subject to change. Current prices can be obtained by writing to the above address. When ordering or inquiring about prices for any of these publications, please give the title, book number, chapter number, and "U.S. Geological Survey Techniques of Water-Resources Investigations."

Book 1. Collection of Water Data by Direct Measurement

Section D. Water Quality

- 1-D1. *Water temperature-influential factors, field measurement, and data presentation*, by H. H. Stevens, Jr., J.F. Ficke, and G. F. Smoot: USGS-TWRI Book 1, Chapter D1. 1975. 65 pages.
- 1-D2. *Guidelines for collection and field analysis of ground-water samples for selected unstable constituents*, by W.W. Wood: USGS-TWRI Book 1, Chapter D2. 1976. 24 pages.

Book 2. Collection of Environmental Data

Section D. Surface Geophysical Methods

- 2-D1. *Application of surface geophysics to ground-water investigations*, by A.A. R. Zohdy, G.P. Eaton, and D.R. Mabey: USGS-TWRI Book 2, Chapter D1. 1974. 116 pages.
- 2-D2. *Application of seismic-refraction techniques to hydrologic studies*, by F.P. Haeni: USGS-TWRI Book 2, Chapter D2. 1988. 86 pages.

Section E. Subsurface Geophysical Methods

- 2-E1. *Application of borehole geophysics to water-resources investigations*, by W.S. Keys and L.M. MacCary: USGS-TWRI Book 2, Chapter E1. 1971. 126 pages.
- 2-E2. *Borehole geophysics applied to ground-water investigations*, by W.S. Keys: USGS-TWRI Book 2, Chapter E2. 1990. 150 pages.

Section F. Drilling and Sampling Methods

- 2-F1. *Application of drilling, coring, and sampling techniques to test holes and wells*, by Eugene Shuter and W.E. Teasdale: USGS-TWRI Book 2, Chapter F1. 1989. 97 pages.

Book 3. Applications of Hydraulics

Section A. Surface-Water Techniques

- 3-A1. *General field and office procedures for indirect discharge measurements*, by M.A. Benson and Tate Dalrymple: USGS-TWRI Book 3, Chapter A1. 1967. 30 pages.
- 3-A2. *Measurement of peak discharge by the slope-area method*, by Tate Dalrymple and M.A. Benson: USGS-TWRI Book 3, Chapter A2. 1967. 12 pages.
- 3-A3. *Measurement of peak discharge at culverts by indirect methods*, by G.L. Bodhaine: USGS-TWRI Book 3, Chapter A3. 1968. 60 pages.
- 3-A4. *Measurement of peak discharge at width contractions by indirect methods*, by H.F. Matthai: USGS-TWRI Book 3, Chapter A4. 1967. 44 pages.
- 3-A5. *Measurement of peak discharge at dams by indirect methods*, by Harry Hulsing: USGS-TWRI Book 3, Chapter A5. 1967. 29 pages.
- 3-A6. *General procedure for gaging streams*, by R.W. Carter and Jacob Davidian: USGS-TWRI Book 3, Chapter A6. 1968. 13 pages.
- 3-A7. *Stage measurement at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS-TWRI Book 3, Chapter A7. 1968. 28 pages.
- 3-A8. *Discharge measurements at gaging stations*, by T.J. Buchanan and W.P. Somers: USGS-TWRI Book 3, Chapter A8. 1969. 65 pages.
- 3-A9. *Measurement of time of travel in streams by dye tracing*, by F.A. Kilpatrick and J.F. Wilson, Jr.: USGS-TWRI Book 3, Chapter A9. 1989. 27 pages.

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PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS--Continued

- 3-A10. *Discharge ratings at gaging stations*, by E.J. Kennedy: USGS-TWRI Book 3, Chapter A10. 1984. 59 pages.
- 3-A11. *Measurement of discharge by the moving-boat method*, by G.F. Smoot and C.E. Novak: USGS-TWRI Book 3, Chapter A11. 1969. 22 pages.
- 3-A12. *Fluorometric procedures for dye tracing*, Revised, by J.F. Wilson, Jr., E.D. Cobb, and F.A. Kilpatrick: USGS-TWRI Book 3, Chapter A12. 1986. 41 pages.
- 3-A13. *Computation of continuous records of streamflow*, by E.J. Kennedy: USGS-TWRI Book 3, Chapter A13. 1983. 53 pages.
- 3-A14. *Use of flumes in measuring discharge*, by F.A. Kilpatrick and V.R. Schneider: USGS-TWRI Book 3, Chapter A14. 1983. 46 pages.
- 3-A15. *Computation of water-surface profiles in open channels*, by Jacob Davidian: USGS-TWRI Book 3, Chapter A15. 1984. 48 pages.
- 3-A16. *Measurement of discharge using tracers*, by F.A. Kilpatrick and E.D. Cobb: USGS-TWRI Book 3, Chapter A16. 1985. 52 pages.
- 3-A17. *Acoustic velocity meter systems*, by Antonius Laenen: USGS-TWRI Book 3, Chapter A17. 1985. 38 pages.
- 3-A18. *Determination of stream reaeration coefficients by use of tracers*, by F.A. Kilpatrick, R.E. Rathbun, Nobuhiro Yotsukura, G.W. Parker, and L.L. DeLong: USGS-TWRI Book 3, Chapter A18. 1989. 52 pages.
- 3-A19. *Levels at streamflow gaging stations*, by E.J. Kennedy: USGS-TWRI Book 3, Chapter A19. 1990. 31 pages.
- 3-A20. *Simulation of soluble waste transport and buildup in surface waters using tracers*, by F.A. Kilpatrick: USGS-TWRI Book 3, Chapter A20. 1993. 38 pages.
- 3-A21. *Stream-gaging cableways*, by C. Russell Wagner: USGS-TWRI Book 3, Chapter A21. 1995. 56 pages.

Section B. Ground-Water Techniques

- 3-B1. *Aquifer-test design, observation, and data analysis*, by R.W. Stallman: USGS-TWRI Book 3, Chapter B1. 1971. 26 pages.
- 3-B2. *Introduction to ground-water hydraulics, a programed text for self-instruction*, by G.D. Bennett: USGS-TWRI Book 3, Chapter B2. 1976. 172 pages.
- 3-B3. *Type curves for selected problems of flow to wells in confined aquifers*, by J.E. Reed: USGS-TWRI Book 3, Chapter B3. 1980. 106 pages.
- 3-B4. *Regression modeling of ground-water flow*, by R.L. Cooley and R.L. Naff: USGS-TWRI Book 3, Chapter B4. 1990. 232 pages.
- 3-B4. *Supplement 1. Regression modeling of ground-water flow --Modifications to the computer code for nonlinear regression solution of steady-state ground-water flow problems*, by R.L. Cooley: USGS-TWRI Book 3, Chapter B4. 1993. 8 pages.
- 3-B5. *Definition of boundary and initial conditions in the analysis of saturated ground-water flow systems--An introduction*, by O.L. Franke, T.E. Reilly, and G.D. Bennett: USGS-TWRI Book 3, Chapter B5. 1987. 15 pages.
- 3-B6. *The principle of superposition and its application in ground-water hydraulics*, by T.E. Reilly, O.L. Franke, and G.D. Bennett: USGS-TWRI Book 3, Chapter B6. 1987. 28 pages.
- 3-B7. *Analytical solutions for one-, two-, and three-dimensional solute transport in ground-water systems with uniform flow*, by E.J. Wexler: USGS-TWRI Book 3, Chapter B7. 1992. 190 pages.

Section C. Sedimentation and Erosion Techniques

- 3-C1. *Fluvial sediment concepts*, by H.P. Guy: USGS-TWRI Book 3, Chapter C1. 1970. 55 pages.
- 3-C2. *Field methods for measurement of fluvial sediment*, by Thomas K. Edwards and G. Douglas Glysson: USGS-TWRI Book 3, Chapter C2. 1988. 80 pages.
- 3-C3. *Computation of fluvial-sediment discharge*, by George Porterfield: USGS-TWRI Book 3, Chapter C3. 1972. 66 pages.

Book 4. Hydrologic Analysis and Interpretation

Section A. Statistical Analysis

- 4-A1. *Some statistical tools in hydrology*, by H.C. Riggs: USGS-TWRI Book 4, Chapter A1. 1968. 39 pages.
- 4-A2. *Frequency curves*, by H.C. Riggs: USGS-TWRI Book 4, Chapter A2. 1968. 15 pages.

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PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS--Continued

Section B. Surface Water

- 4-B1. *Low-flow investigations*, by H.C. Riggs: USGS-TWRI Book 4, Chapter B1. 1972. 18 pages.
- 4-B2. *Storage analyses for water supply*, by H.C. Riggs and C.H. Hardison: USGS-TWRI Book 4, Chapter B2. 1973. 20 pages.
- 4-B3. *Regional analyses of streamflow characteristics*, by H.C. Riggs: USGS-TWRI Book 4, Chapter B3. 1973. 15 pages.

Section D. Interrelated Phases of the Hydrologic Cycle

- 4-D1. *Computation of rate and volume of stream depletion by wells*, by C.T. Jenkins: USGS-TWRI Book 4, Chapter D1. 1970. 17 pages.

Book 5. Laboratory Analysis

Section A. Water Analysis

- 5-A1. *Methods for determination of inorganic substances in water and fluvial sediments*, by M.J. Fishman and L.C. Friedman, editors: USGS-TWRI Book 5, Chapter A1. 1989. 545 pages.
- 5-A2. *Determination of minor elements in water by emission spectroscopy*, by P.R. Barnett and E.C. Mallory, Jr.: USGS-TWRI Book 5, Chapter A2. 1971. 31 pages.
- 5-A3. *Methods for the determination of organic substances in water and fluvial sediments*, edited by R.L. Wershaw, M.J. Fishman, R.R. Grabbe, and L.E. Lowe: USGS-TWRI Book 5, Chapter A3. 1987. 80 pages.
- 5-A4. *Methods for collection and analysis of aquatic biological and microbiological samples*, by L.J. Britton and P.E. Greeson, editors: USGS-TWRI Book 5, Chapter A4. 1989. 363 pages.
- 5-A5. *Methods for determination of radioactive substances in water and fluvial sediments*, by L.L. Thatcher, V.J. Janzer, and K.W. Edwards: USGS-TWRI Book 5, Chapter A5. 1977. 95 pages.
- 5-A6. *Quality assurance practices for the chemical and biological analyses of water and fluvial sediments*, by L.C. Friedman and D.E. Erdmann: USGS-TWRI Book 5, Chapter A6. 1982. 181 pages.

Section C. Sediment Analysis

- 5-C1. *Laboratory theory and methods for sediment analysis*, by H.P. Guy: USGS-TWRI Book 5, Chapter C1. 1969. 58 pages.

Book 6. Modeling Techniques

Section A. Ground Water

- 6-A1. *A modular three-dimensional finite-difference ground-water flow model*, by M.G. McDonald and A.W. Harbaugh: USGS-TWRI Book 6, Chapter A1. 1988. 586 pages.
- 6-A2. *Documentation of a computer program to simulate aquifer-system compaction using the modular finite-difference ground-water flow model*, by S.A. Leake and D.E. Prudic: USGS-TWRI Book 6, Chapter A2. 1991. 68 pages.
- 6-A3. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 1: Model Description and User's Manual*, by L.J. Torak: USGS-TWRI Book 6, Chapter A3. 1993. 136 pages.
- 6-A4. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 2: Derivation of finite-element equations and comparisons with analytical solutions*, by R.L. Cooley: USGS-TWRI Book 6, Chapter A4. 1992. 108 pages.
- 6-A5. *A modular finite-element model (MODFE) for areal and axisymmetric ground-water-flow problems, Part 3: Design philosophy and programming details*, by L.J. Torak: USGS-TWRI Book 6, Chapter A5. 1993. 243 pages.
- 6-A6. *A coupled surface-water and ground-water flow model (MODBRANCH) for simulation of stream-aquifer interaction*, by Eric D. Swain and Eliezer J. Wexler. 1996. 125 pages.

Book 7. Automated Data Processing and Computations

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PUBLICATIONS ON TECHNIQUES OF WATER-RESOURCES INVESTIGATIONS--Continued

Section C. Computer Programs

- 7-C1. *Finite difference model for aquifer simulation in two dimensions with results of numerical experiments*, by P.C. Trescott, G.F. Pinder, and S.P. Larson: USGS-TWRI Book 7, Chapter C1. 1976. 116 pages.
- 7-C2. *Computer model of two-dimensional solute transport and dispersion in ground water*, by L.F. Konikow and J.D. Bredehoeft: USGS-TWRI Book 7, Chapter C2. 1978. 90 pages.
- 7-C3. *A model for simulation of flow in singular and interconnected channels*, by R.W. Schaffranek, R.A. Baltzer, and D.E. Goldberg: USGS-TWRI Book 7, Chapter C3. 1981. 110 pages.

Book 8. Instrumentation

Section A. Instruments for Measurement of Water Level

- 8-A1. *Methods of measuring water levels in deep wells*, by M.S. Garber and F.C. Koopman: USGS-TWRI Book 8, Chapter A1. 1968. 23 pages.
- 8-A2. *Installation and service manual for U.S. Geological Survey manometers*, by J.D. Craig: USGS-TWRI Book 8, Chapter A2. 1983. 57 pages.

Section B. Instruments for Measurement of Discharge

- 8-B2. *Calibration and maintenance of vertical-axis type current meters*, by G.F. Smoot and C.E. Novak: USGS-TWRI Book 8, Chapter B2. 1968. 15 pages.

Book 9. Handbooks for Water-Resources Investigations

Section A. National Field Manual for the Collection of Water-Quality Data

- 9-A6. *National Field Manual for the Collection of Water-Quality Data: Field Measurements*, edited by F.D. Wilde and D.B. Radtke: USGS-TWRI Book 9, Chapter A6. 1998. Variously paginated.
- 9-A7. *National Field Manual for the Collection of Water-Quality Data: Biological Indicators*, by D.N. Myers and F.D. Wilde: USGS-TWRI Book 9, Chapter A7. 1997. 49 pages.
- 9-A8. *National Field Manual for the Collection of Water-Quality Data: Bottom-material samples*, by D.B. Radtke: USGS-TWRI Book 9, Chapter A8. 1998. 48 pages.
- 9-A9. *National Field Manual for the Collection of Water-Quality Data: Safety in Field Activities*, by S.L. Lane and R.G. Fay: USGS-TWRI Book 9, Chapter A9. 1998. 60 pages.

WATER RESOURCES DATA - VIRGINIA, 1999

SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON WATER RESOURCES IN VIRGINIA

Listed below is a selection of reports on water resources in Virginia which are available through the Virginia District at the U.S. Geological Survey, WRD, 3600 West Broad Street, Room 606, Richmond, Virginia 23230.

An index of geophysical logging in Virginia by the U.S. Geological Survey, by M. P. Mulheren, J. D. Larson, and H. T. Hopkins: U.S. Geological Survey Open-File Report 82-432. 1982. 34 pages.

Annual maximum stages and discharges of selected streams in Virginia through 1990, by B. J. Prugh, Jr., E. H. Nuckels, and C. G. Humphrey: U.S. Geological Survey Open-File Report 90-587. 1991. 442 pages.

Assessment of ground-water contamination from a leaking underground storage tank at a Defense Supply Center near Richmond, Virginia, by W. G. Wright and J. D. Powell: U.S. Geological Survey Water-Resources Investigations Report 90-4091. 1990. 38 pages.

Availability and quality of ground water in the Piedmont province of Virginia, by J. D. Powell and J. M. Abe: U.S. Geological Survey Water-Resources Investigations Report 85-4235. 1985. 33 pages.
Base-flow characteristics of streams in the Valley and Ridge, the Blue Ridge, and the Piedmont Physiographic Provinces of Virginia, by D.L. Nelms, G.E. Harlow, Jr., and D.C. Hayes: U.S. Geological Survey Water Supply Paper 2457. 1997. 48 pages.

Compilation of surface-water and water-quality data-collection sites on selected streams in Virginia, by B. J. Prugh, Jr. and C. G. Humphrey: U.S. Geological Survey Open-File Report 93-462. 1994. 645 pages.

Conceptualization and analysis of ground-water flow system in the Coastal Plain of Virginia and adjacent parts of Maryland and North Carolina, by J. F. Harsh and R. J. Lacznik: U.S. Geological Survey Professional Paper 1404-F. 1990. 100 pages.

Design, revisions, and considerations for continued use of a ground-water-flow model of the Coastal Plain aquifer system in Virginia, by R. McFarland: U. S. Geological Survey Water-resources Investigations Report 98-4085. 1998. 49 pages.

Documentation of a multiple-technique computer program for plotting major-ion composition of natural waters, by L. I. Briel: U.S. Geological Survey Open-File Report 93-74. 1994.

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Effects of fracturing on well yields in the coalfield areas of Wise and Dickenson Counties, southwestern Virginia, by W. G. Wright: U.S. Geological Survey Water-Resources Investigations Report 85-4061. 1985. 21 pages.

Estimating net drawdown resulting from episodic withdrawals at six well fields in the Coastal Plain physiographic province of Virginia, by M. J. Focazio and G. K. Speiran: U.S. Geological Survey Water-Resources Investigations Report 93-4159. 1994. 21 pages.

Evaluation of municipal withdrawals from the confined aquifers of southeastern Virginia, by D. L. Richardson, R. J. Lacznik, and P. A. Hamilton: U.S. Geological Survey Open-File Report 88-723. 1988. 50 pages

Flood of November 1985 in West Virginia, Pennsylvania, Maryland, and Virginia, by J. B. Lescinsky: U.S. Geological Survey Open-File Report 86-486. 1987. 33 pages.

Floods in West Virginia, Virginia, Pennsylvania, and Maryland, November 1985, by D. H. Carpenter: U.S. Geological Survey Water-Resources Investigations Report 88-4213. 1990. 86 pages.

Geohydrology and Geochemistry near coastal ground-water-discharge areas of the Eastern Shore, Virginia, by G.K. Speiran: U.S. Geological Survey Water Supply Paper. 1996. 73 pages.

Geohydrology and the occurrence of volatile organic compounds in ground water, Culpeper basin of Prince William County, Virginia, by D. L. Nelms and D. L. Richardson: U.S. Geological Survey Water-Resources Investigations Report 90-4032. 1991. 94 pages.

Geohydrology of the shallow aquifer system, Naval Weapons Station Yorktown, Yorktown, Virginia, by A.R. Brockman, D.L. Nelms, G.E. Harlow, Jr., and J.J. Gildea: U.S. Geological Survey Water-Resources Investigations Report 97-4188. 61 pages.

Ground-water availability along the Blue Ridge Parkway, Virginia, by H. T. Hopkins: U.S. Geological Survey Water-Resources Investigations Report 84-4168. 1985. 154 pages.

Ground-water contamination and movement at the Defense General Supply Center, Richmond, Virginia, by J. D. Powell, W. G. Wright, D. L. Nelms, and R. J. Ahlin: U.S. Geological Survey Water-Resources Investigations Report 90-4113. 1991. 36 pages.

Ground-water concerns for the Eastern Shore, Virginia, by D. L. Richardson: U.S. Geological Survey Open-File Report 93-93. 1994. 4 pages (Water-Resources Notes).

Ground-water discharge from the Coastal Plain of Virginia, by D. L. Richardson: U.S. Geological Survey Water-Resources Investigations Report 93-4191. 1995.

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SELECTED U.S. GEOLOGICAL SURVEY REPORTS ON WATER RESOURCES IN VIRGINIA--Continued

Ground-water hydrology and quality in the Valley and Ridge and Blue Ridge physiographic provinces of Clarke County, Virginia, by W. G. Wright: U.S. Geological Survey Water-Resources Investigations Report 90-4134. 1991. 61 pages.

Ground-water in Virginia: Use during 1990, availability, and resource information needs, by McFarland, E. R. and Focazio, M. J.: U.S. Geological Survey Open-File Report 94-114. 1 page.

Ground-water use and levels in the southern Coastal Plain of Virginia, by J. D. Larson and R. J. Laczniaik: U.S. Geological Survey Open-File Report 91-187. 1991. 165 pages.

Ground-water withdrawals from the confined aquifers in the Coastal Plain of Virginia, 1891-1982, by T. K. Kull and R. J. Laczniaik: U.S. Geological Survey Water-Resources Investigations Report 87-4049. 1987. 37 pages.

Guide to obtaining U.S. Geological Survey information, by K. Dodd, H. K. Fuller, and P. F. Clarke: U.S. Geological Survey Circular 900. 1985. 35 pages.

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Hydrogeologic framework, analysis of ground-water flow, and relations to regional flow in the Fall Zone near Richmond, Virginia, by E.R. McFarland: U.S. Geological Survey Water-Resources Investigations Report 97-4021. 1997. 56 pages.

Hydrogeologic framework of the shallow aquifer system of York County, Virginia, by A. R. Brockman and D. L. Richardson: U.S. Geological Survey Water-Resources Investigations Report 92-4111. 1992. 36 pages.

Hydrogeology and analysis of the ground-water-flow system in the Coastal Plain of southeastern Virginia, by P. A. Hamilton and J. D. Larson: U.S. Geological Survey Water-Resources Investigations Report 87-4240. 1988. 175 pages.

Hydrogeology and analysis of the ground-water-flow system of the Eastern Shore, Virginia, by D. L. Richardson: U.S. Geological Survey Water-Supply Paper 2401. 1994. 108 pages.

Hydrogeology and ground-water flow of the shallow aquifer system at the Naval Surface Warfare Center, Dahlgren, Virginia, by B. S. Smith: U.S. Geological Survey Water-Resources Investigations Report 99-4149. 1999. 40 pages.

Hydrogeology and water quality of the shallow aquifer system at the Explosive Experimental Area, Naval Surface Warfare Center, Dahlgren Site, Dahlgren, Virginia, by C.F. Bell: U.S. Geological Survey Water Resources Investigations Report 96-4209. 1996. 37 pages.

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Hydrogeology of and quality and recharge ages of ground water in, Prince William County, Virginia 1990-91, by D.L. Nelms and A. R. Brockman: U.S. Geological Survey Water-Resources Investigations Report 97-4009. 1997. 58 pages.

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Hydrologic conditions and trends in Shenandoah National Park, Virginia, 1983-84, by D. D. Lynch: U.S. Geological Survey Water-Resources Investigations Report 87-4131. 1987. 115 pages.

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Low-flow characteristics of streams in Virginia, by D. C. Hayes: U.S. Geological Survey Water-Supply Paper 2374. 1990. 69 pages.

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National water summary, 1988-89, floods and droughts in Virginia, by E. H. Nuckels and B. J. Prugh, Jr.: U.S. Geological Survey Water-Supply Paper 2375. 1991. p. 543-550.

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Nutrient and suspended solids loads, yields, and trends in the non-tidal part of five major river basins in Virginia, 1985-96, by H. M. Johnson and D. L. Belval: U.S. Geological Survey Water-Resources Investigations Report 98-4025. 1998. 36 pages.

Plan of study for the regional aquifer-system analyses of the Appalachian Valley and Ridge, Piedmont, and Blue Ridge physiographic provinces of the eastern and southeastern United States with a description of study-area geology and hydrogeology, by L. A. Swain, E. F. Hollyday, C. C. Daniel, III, and O. S. Zapecza. 1991. 44 pages.

Potentiometric surface of the Brightseat-upper Potomac aquifer in Virginia, 1994, by E. C. Hammond, E. R. McFarland, and M. J. Focazio: U.S. Geological Survey Open-File Report 94-370. 1995. 1 page.

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Potentiometric surface of the middle Potomac aquifer in Virginia, 1994, by E. C. Hammond, E. R. McFarland, and M. J. Focazio: U.S. Geological Survey Open-File Report 94-372. 1995. 1 page.

Preliminary estimates of residence times and apparent ages of ground water in the Chesapeake Bay watershed and water-quality data from a survey of springs, by M.J. Focazio, L. N. Plummer, J. K. Bohlke, E. Busenberg, L. J. Bachman, and D. S. Powars: U.S. Geological Survey Water-Resources Investigations Report 97-4225. 1998. 75 pages.

Preliminary investigation of soil and ground-water contamination at the U.S. Army Petroleum Training Facility, Fort Lee, Virginia, September-October 1989, by W. G. Wright and J. D. Powell: U.S. Geological Survey Open-File Report 90-387. 1990. 28 pages.

Quality of ground water in southern Buchanan County, Virginia, by S. M. Rogers and J. D. Powell: U.S. Geological Survey Water-Resources Investigations 82-4022. 1983. 36 pages.

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Relation between ground-water quality and mineralogy in the coal-producing Norton Formation of Buchanan County, Virginia, by J. D. Powell and J. D. Larson: U.S. Geological Survey Water-Supply Paper 2274. 1985. 30 pages.

Relation of stream quality to streamflow, and estimated loads of selected water-quality constituents in the James and Rappahannock Rivers near the Fall Line of Virginia, July 1988 through 1990, by D. L. Belval, M. D. Woodside, and J. P. Campbell: U.S. Geological Survey Water-Resources Investigations Report 94-4042. 1995. 85 pages.

Scour at bridge sites in Delaware, Maryland, and Virginia, by D.C. Hayes: U.S. Geological Survey Water Resources Investigations Report 96-4089. 1996. 35 pages.20

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The potential for saltwater intrusion in the Potomac aquifers of the York-James peninsula, Virginia, by B.S. Smith: U.S. Geological Survey Water-Resources Investigations Report 98-4187. 1999. 24 pages.

Trends in nutrients and suspended solids at the Fall Line of five tributaries to the Chesapeake Bay, July 1988 through June 1995, by C.F. Bell, D.L. Belval, J.P. Campbell: U.S. Geological Survey Water Resources Investigations Report 96-4191. 1996. 37 pages.

Use during 1990, availability, and resource-information needs, by E. R. McFarland and M. J. Focazio: U.S. Geological Survey Open-File Report 94-114. 1995. 2 pages.

Use of fathometers and electrical-conductivity probes to monitor riverbed scour at bridge piers, by D. C. Hayes and F. E. Drummond: U.S. Geological Survey Water-Resources Investigations Report 94-4164. 1995. 17 pages.

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Water-quality assessment of the Albemarle-Pamlico Basin, North Carolina and Virginia--Chemical analyses of organic compounds and inorganic constituents in streambed sediment, 1992-93, by M.D. Woodside and B.R. Simerl: U.S. Geological Survey Open-File Report 96-103. 1996. 25 pages.

Water-quality assessment of the Delmarva Peninsula, Delaware, Maryland, and Virginia--Effects of agricultural activities on, and distribution of, nitrate and other inorganic constituents in the surficial aquifer, by P. A. Hamilton, J. M. Denver, P. J. Phillips, and R. J. Shedlock: U.S. Geological Survey Open-File Report 93-40. 1994. 87 pages.

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Water use in Virginia: Surface-water and ground-water withdrawals during 1992, by E. C. Hammond and M. J. Focazio: U.S. Geological Survey Fact Sheet 94-057. 1995. 2 pages.

Well-construction, water-level, and ground-water-quality data for Prince William County, Virginia, 1992, by D. L. Nelms and A. R. Brockman: U.S. Geological Survey Open-File Report 93-443. 1994. 73 pages.

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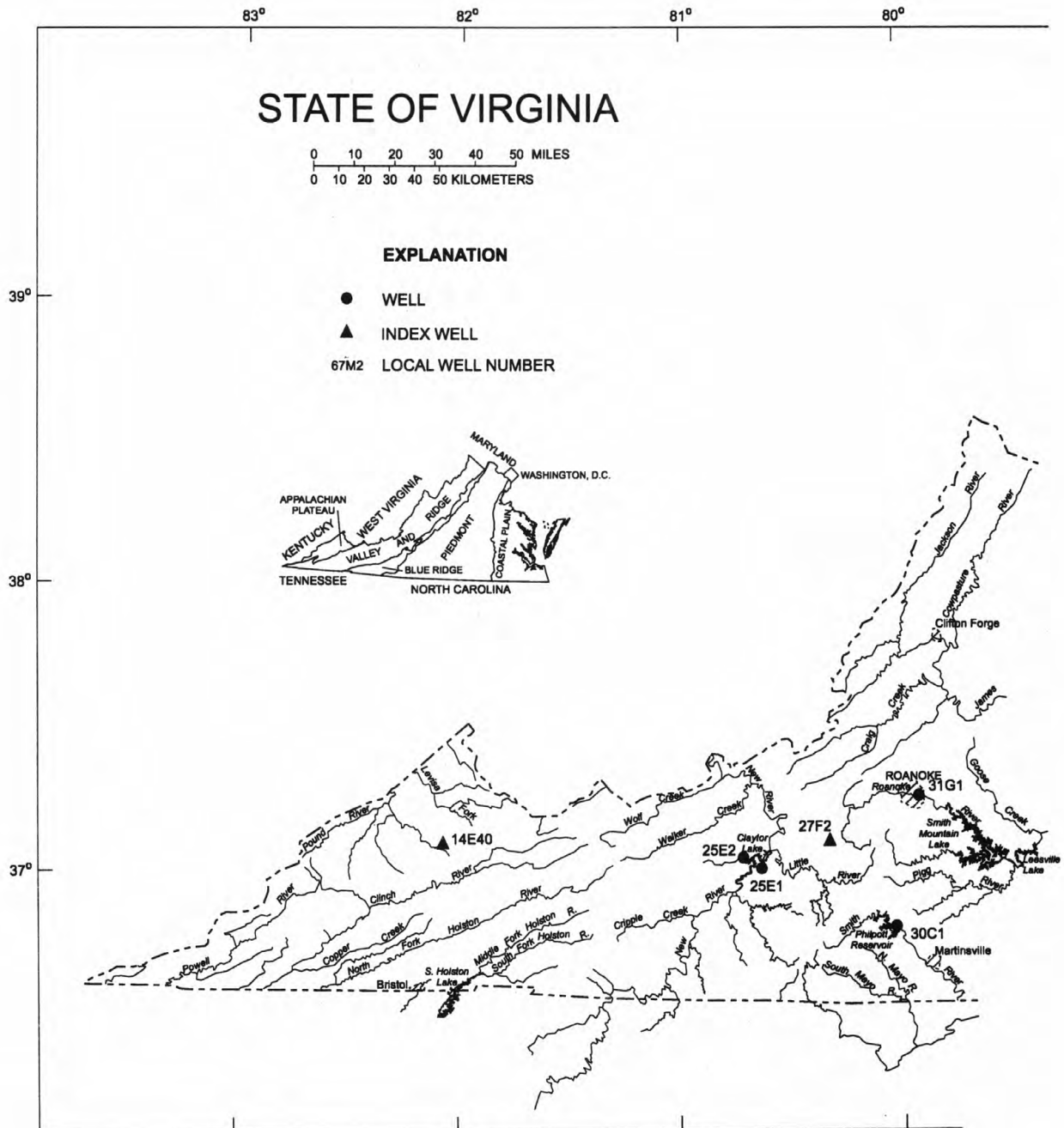
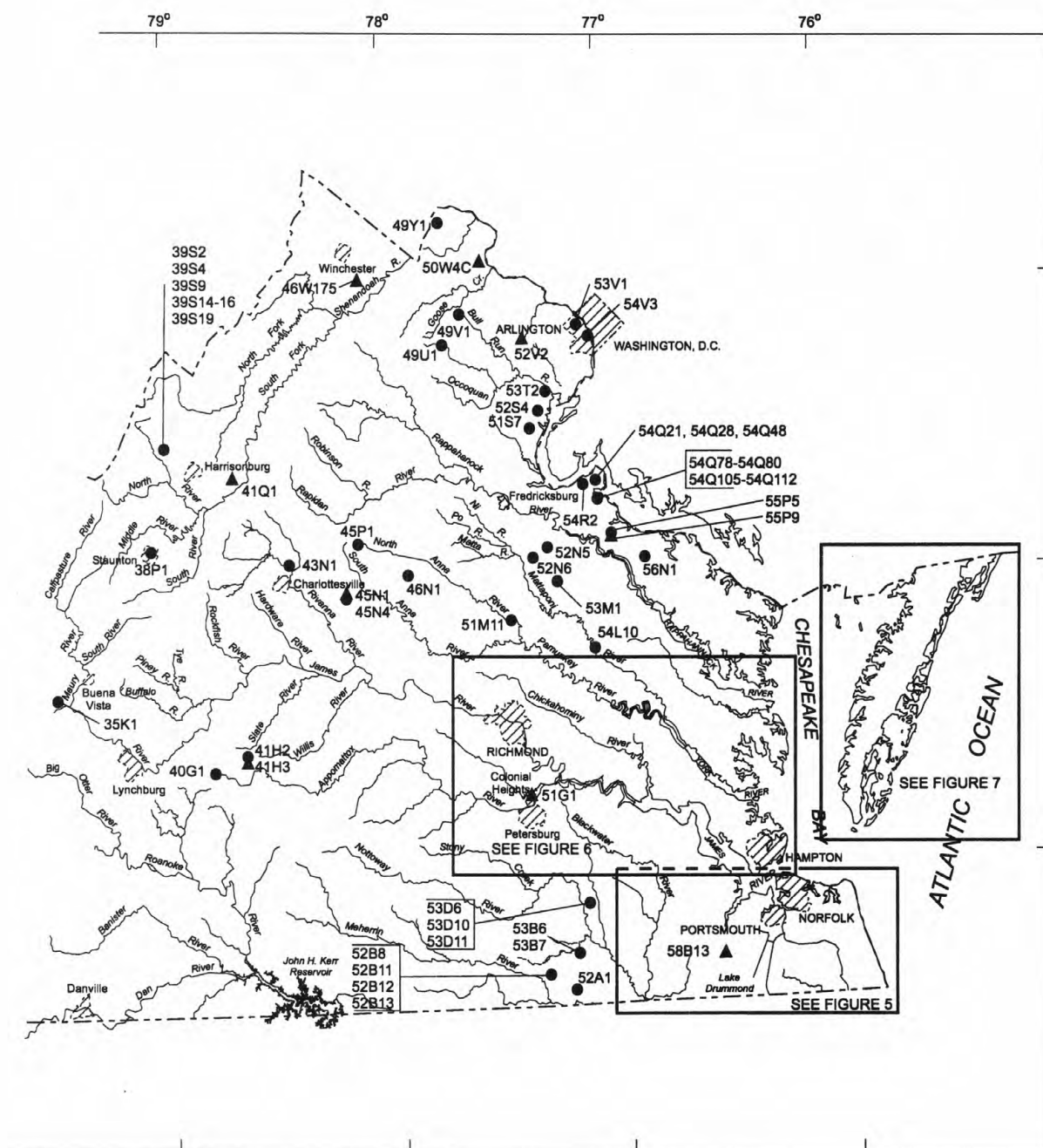


Figure 4. Location of ground-water observation wells.



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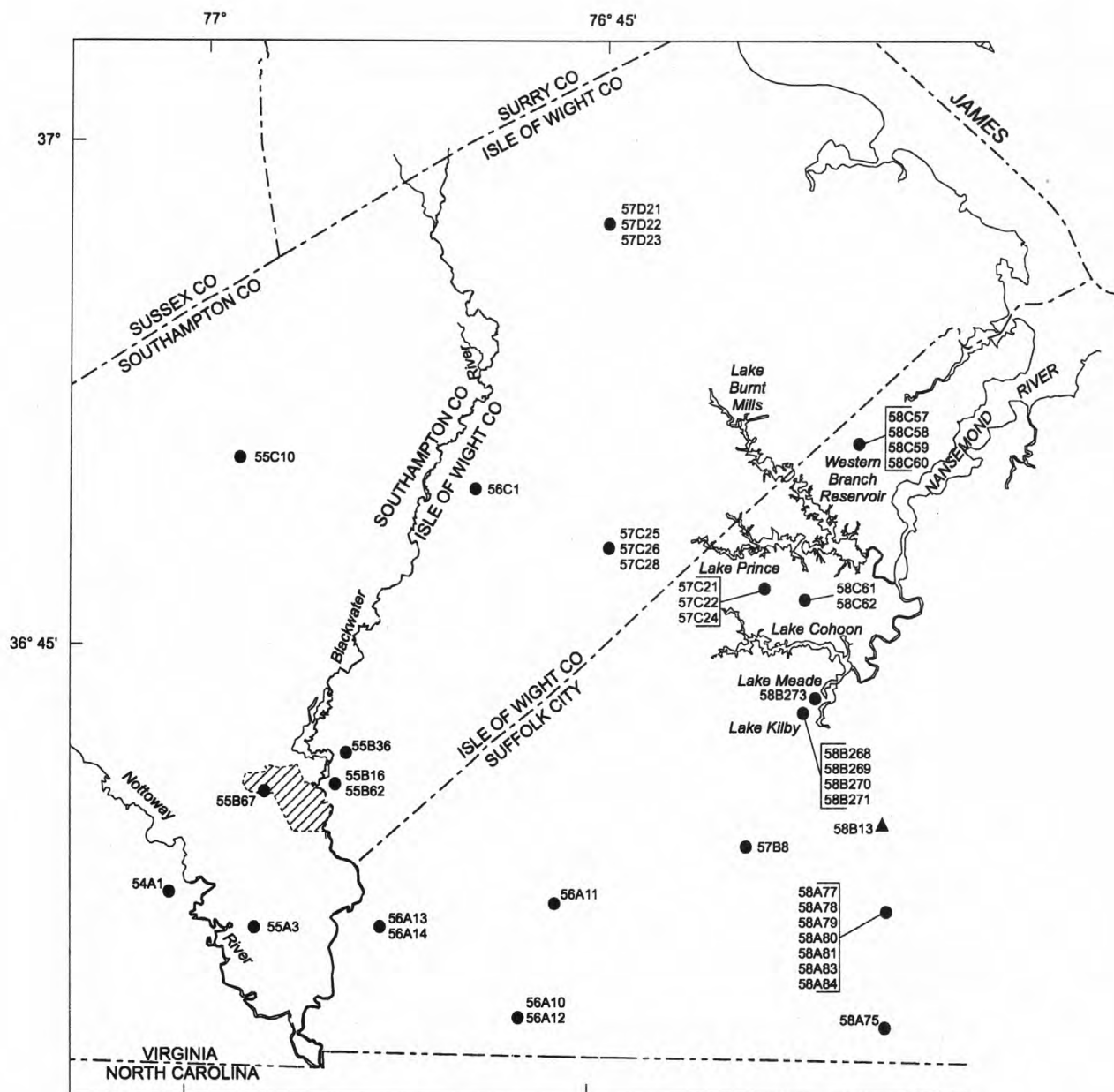
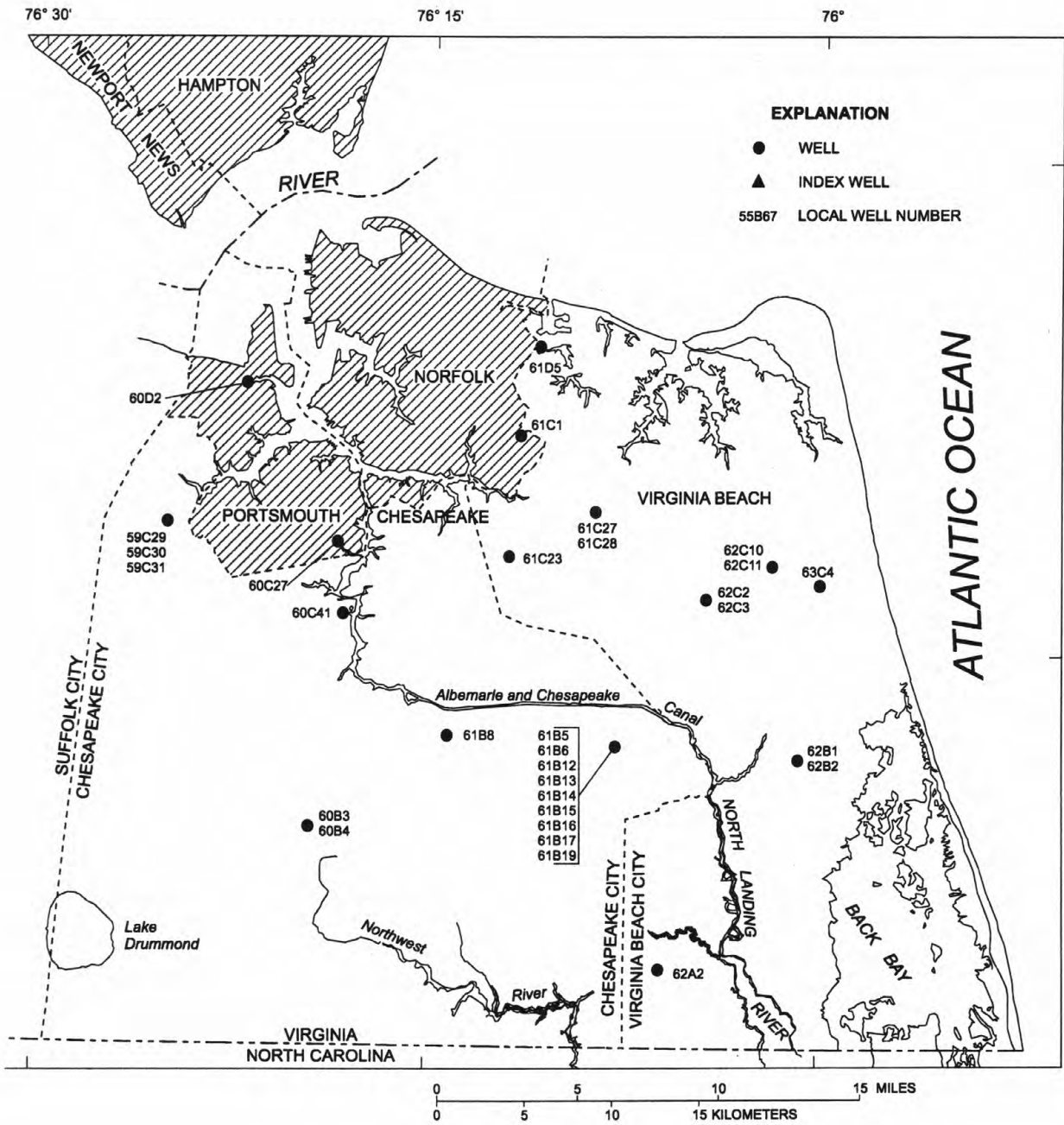


Figure 5. Location of ground-water observation wells in southeastern Virginia.



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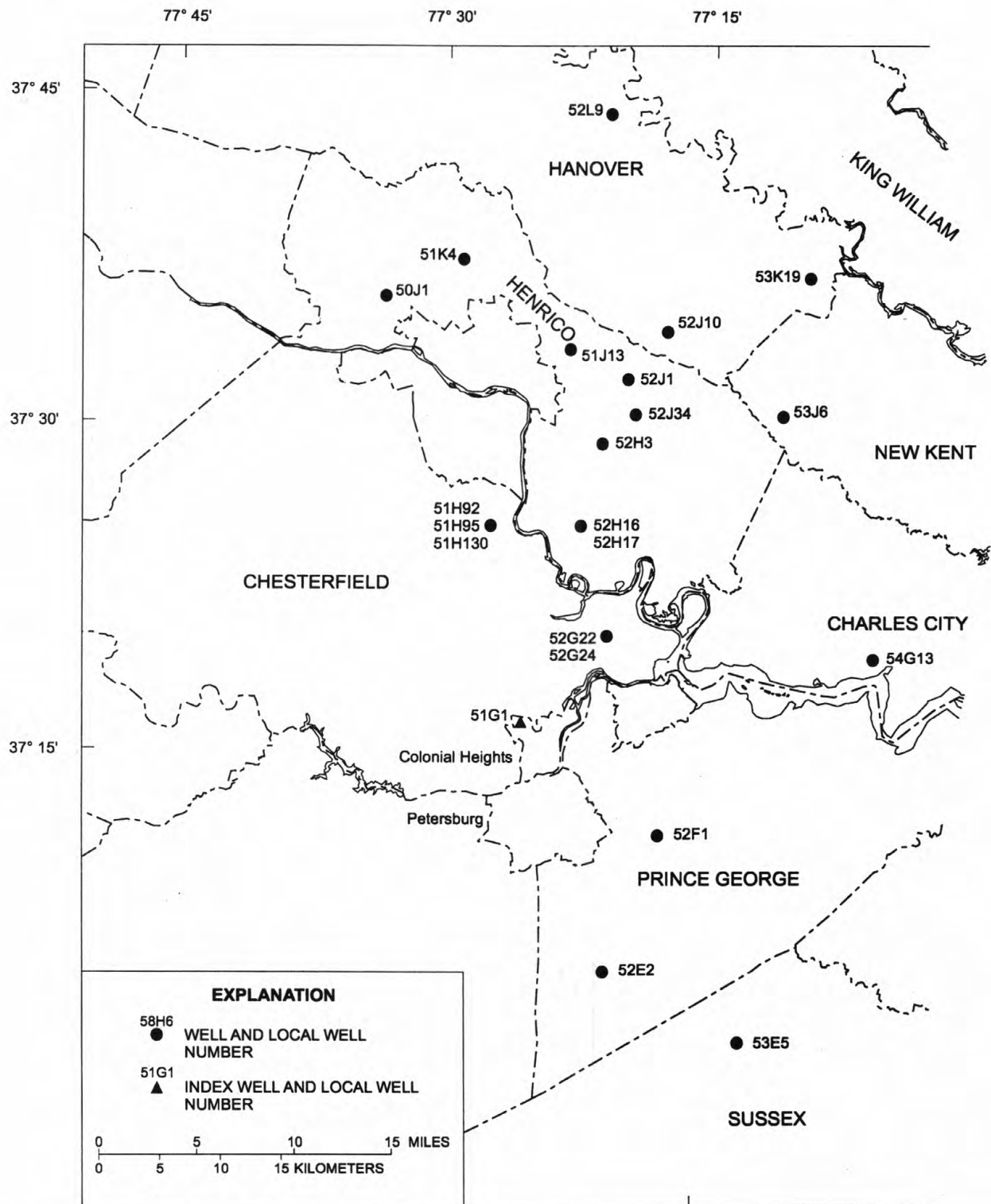
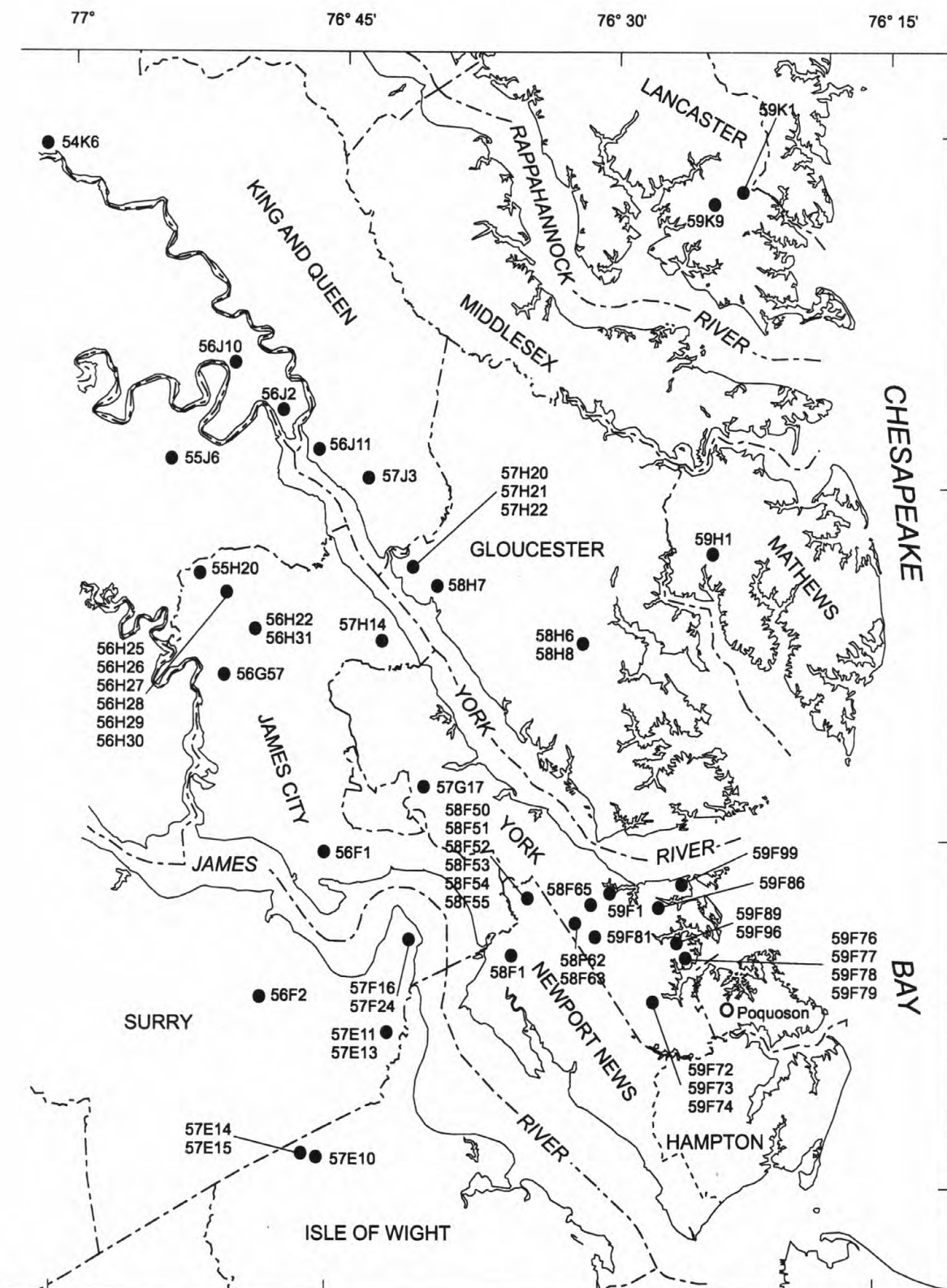


Figure 6. Location of ground-water observation wells on York-James peninsula and vicinity.



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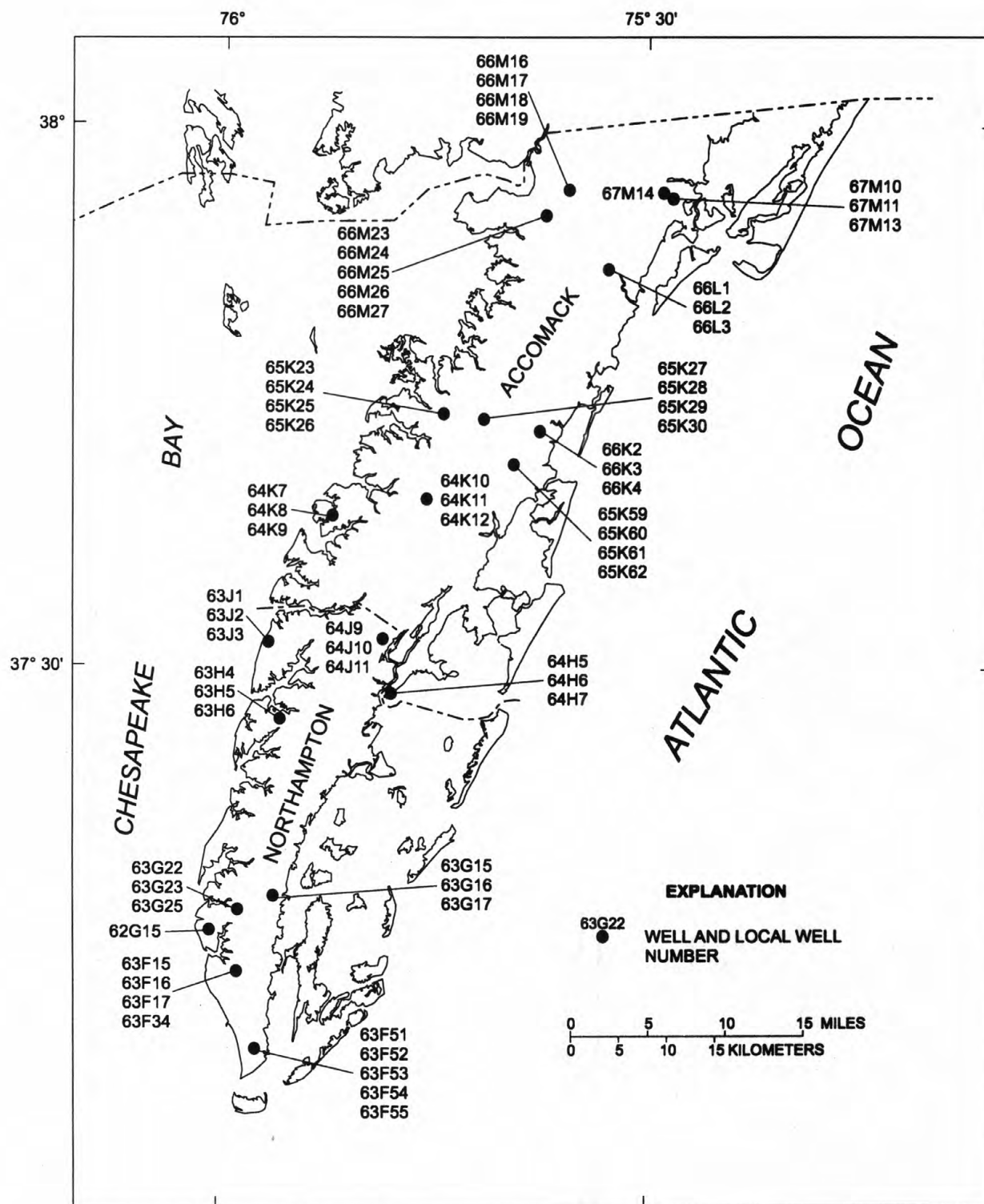


Figure 7. Location of ground-water observation wells on Delmarva peninsula.

GROUND-WATER-LEVEL RECORDS

GROUND-WATER LEVELS

ACCOMACK COUNTY

372922076470101. Local number, 64H 5 SOW 102C.

LOCATION.--Lat 37°29'21", long 75°47'05", Hydrologic Unit 02080110, at entrance to Virginia Landing, 0.2 mi south from end of State Highway 605, 2.0 mi southeast of Willis Wharf, and 5.2 mi southwest of intersection of State Highways 605 and 182. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 306 ft, screened 296 to 306 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Nov. 13, 1985, to July 24, 1995, bimonthly measurement with chalked tape. Prior to Nov. 13, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 6 ft above sea level, from topographic map. Measuring point: Top of casing, 0.3 ft above land-surface datum prior to Mar. 1, 1988; 1.1 ft thereafter.

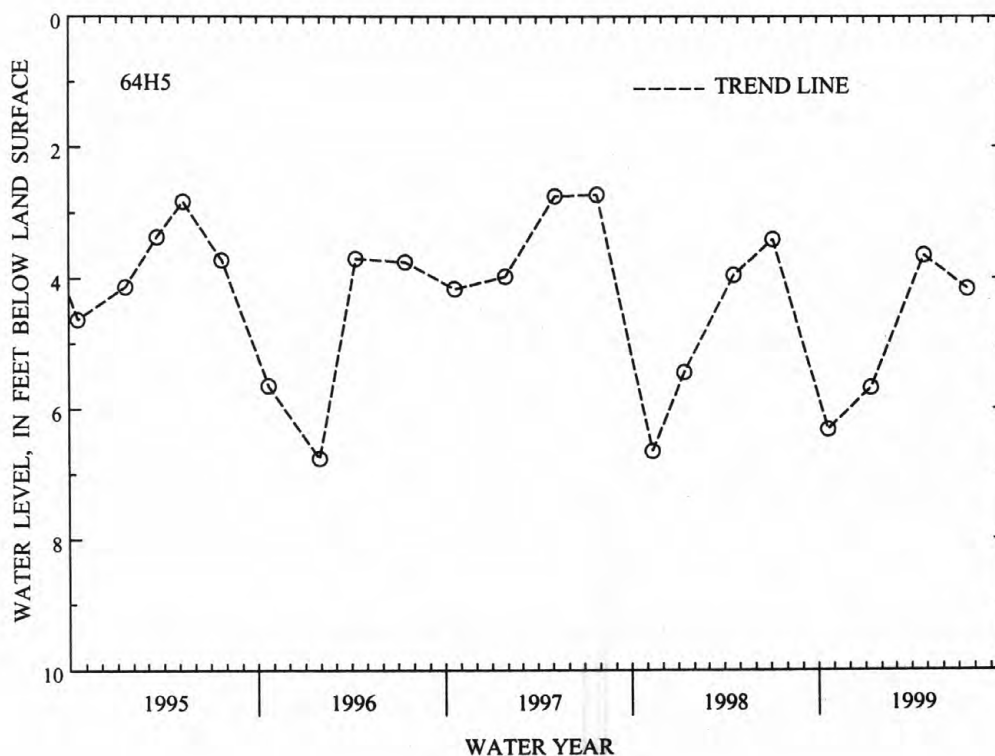
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

PERIOD OF RECORD.--June 1977 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.70 ft below land-surface datum, June 6, 1984; lowest measured, 7.35 ft below land-surface datum, Nov. 1, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	6.32	JAN 13	5.68	APR 27	3.65	JUL 20	4.16
WATER YEAR 1999	HIGHEST	3.65	APR 27, 1999				
	LOWEST	6.32	OCT 21, 1998				



GROUND-WATER LEVELS

ACCOMACK COUNTY

372905075474002. Local number, 64H 6 SOW 102A.

LOCATION.--Lat 37°29'21", long 75°47'05", Hydrologic Unit 02080110, at entrance to Virginia Landing, 0.2 mi south from end of State Highway 605, 2.0 mi southeast of Willis Wharf, and 5.2 mi southwest of intersection of State Highways 605 and 182. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 154 ft, screened 144 to 154 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Nov. 13, 1985, to July 24, 1995, bimonthly measurement with chalked tape. Prior to Nov. 13, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 6 ft above sea level, from topographic map. Measuring point: Top of casing, 0.7 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

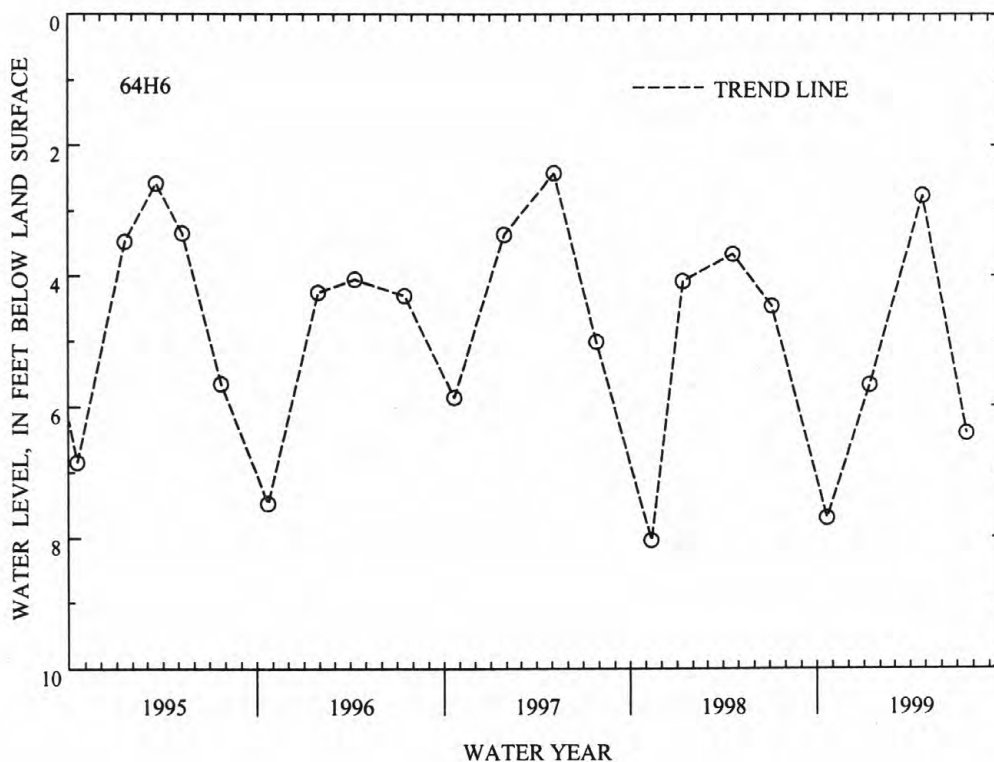
PERIOD OF RECORD.--June 1977 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.33 ft below land-surface datum, Oct. 30, 1984; lowest measured, 9.63 ft below land-surface datum, Sept. 1, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	7.70	JAN 13	5.67	APR 27	2.76	JUL 20	6.41

WATER YEAR 1999	HIGHEST	2.76	APR 27, 1999
	LOWEST	7.70	OCT 21, 1998



GROUND-WATER LEVELS

ACCOMACK COUNTY

372905075474001. Local number, 64H 7 SOW 102B.

LOCATION.--Lat 37°29'21", long 75°47'05", Hydrologic Unit 02080110, at entrance to Virginia Landing, 0.2 mi south from end of State Highway 605, 2.0 mi southeast of Willis Wharf, and 5.2 mi southwest of intersection of State Highways 605 and 182. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 220 ft, screened 210 to 220 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Nov. 13, 1985, to July 24, 1995, bimonthly measurement with chalked tape. Prior to Nov. 13, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 6 ft above sea level, from topographic map. Measuring point: Top of casing, 0.8 ft above land-surface datum.

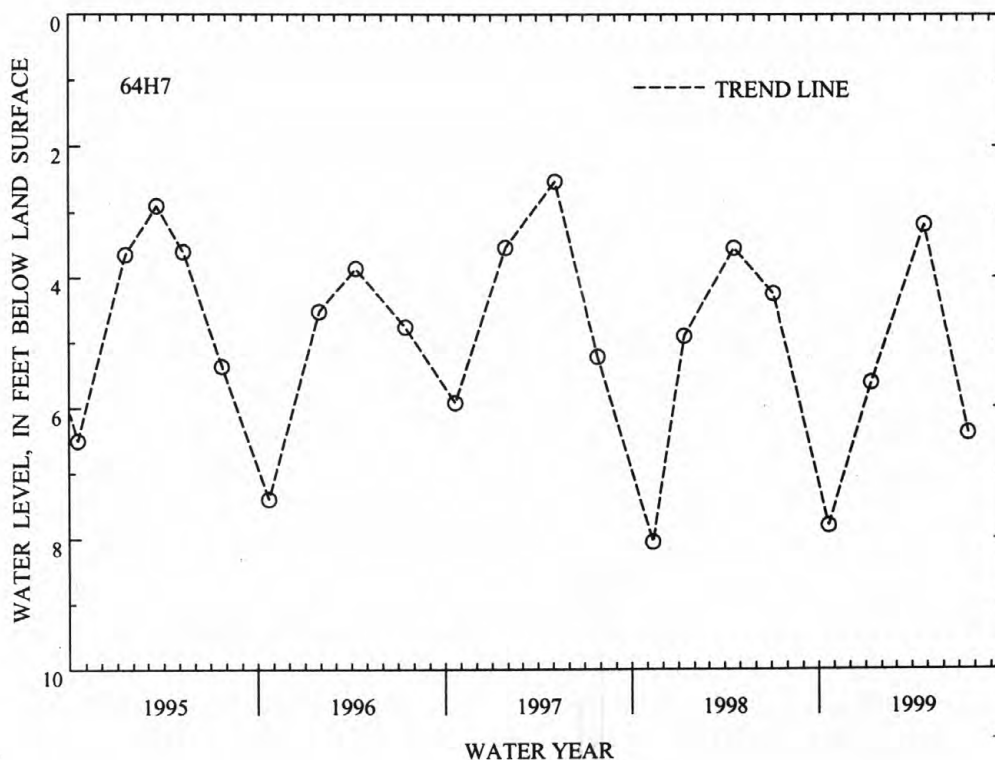
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--June 1977 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.19 ft below land-surface datum, July 10, 1984; lowest measured, 8.76 ft below land-surface datum, Nov. 1, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	7.80	JAN 13	5.62	APR 27	3.19	JUL 20	6.39
WATER YEAR 1999	HIGHEST	3.19	APR 27, 1999				
	LOWEST	7.80	OCT 21, 1998				



GROUND-WATER LEVELS

ACCOMACK COUNTY

373845075522501. Local number, 64K 7 SOW 106C.

LOCATION.--Lat 37°38'45", long 75°52'25", Hydrologic Unit 02080109, 100 ft north of State Highway 633, 0.3 mi northwest of intersection of State Highways 631 and 633, and 0.3 mi northwest of Hacksneck. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 176 ft, screened 166 to 176 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 3 ft above sea level, from topographic map. Measuring point: Top of casing, 0.73 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

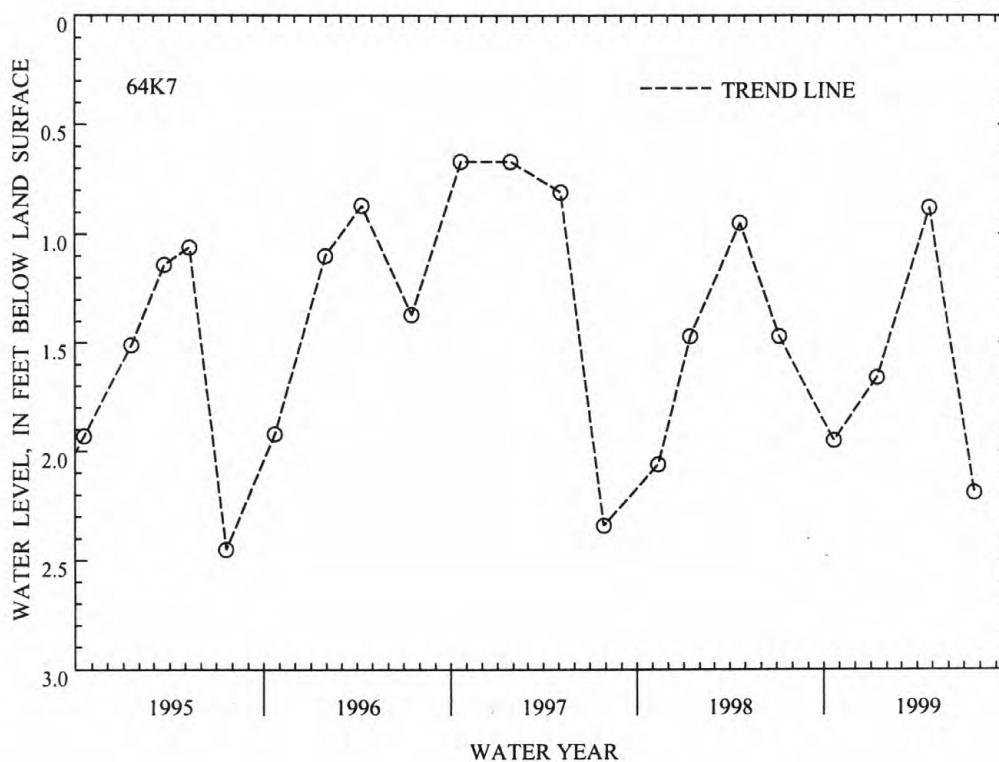
PERIOD OF RECORD.--October 1977 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.31 ft below land-surface datum, May 22, 1991; lowest measured, 2.35 ft below land-surface datum, July 16, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	1.95	JAN 13	1.66	APR 26	0.88	JUL 21	2.19

WATER YEAR 1999	HIGHEST	0.88	APR 26, 1999
	LOWEST	2.19	JUL 21, 1999



GROUND-WATER LEVELS

ACCOMACK COUNTY

373845075522503. Local number, 64K 8 SOW 106B.

LOCATION.--Lat 37°38'45", long 75°52'25", Hydrologic Unit 02080109, 100 ft north of State Highway 633, 0.3 mi northwest of intersection of State Highways 631 and 633, and 0.3 mi northwest of Hacksneck. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 95 ft, screened 85 to 95 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 3 ft above sea level, from topographic map. Measuring point: Top of casing, 0.7 ft above land-surface datum.

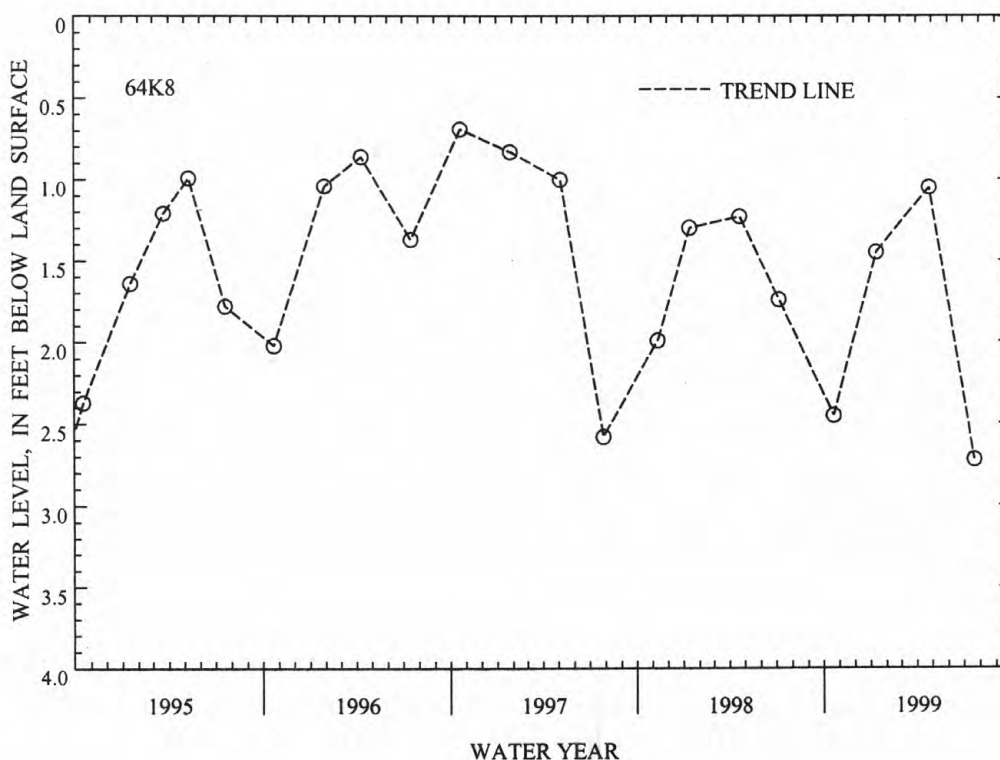
REMARKS.--Records provided by the Virginia Department of Environmental Quality. - Water Division.

PERIOD OF RECORD.--October 1977 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.69 ft below land-surface datum, Oct. 22, 1996; lowest measured, 2.92 ft below land-surface datum, Sept. 2, 1993.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	2.45	JAN 13	1.45	APR 26	1.05	JUL 21	2.72
WATER YEAR 1999	HIGHEST	1.05	APR 26, 1999				
	LOWEST	2.72	JUL 21, 1999				



GROUND-WATER LEVELS

ACCOMACK COUNTY

373845075522502. Local number, 64K 9 SOW 106A.

LOCATION.--Lat 37°38'45", long 75°52'25", Hydrologic Unit 02080109, 100 ft north of State Highway 633, 0.3 mi northwest of intersection of State Highways 631 and 633, and 0.3 mi northwest of Hacksneck. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 37 ft, screened 27 to 37 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is approximately 3 ft above sea level, from topographic map. Measuring point: Top of casing, 1.2 ft above land-surface datum.

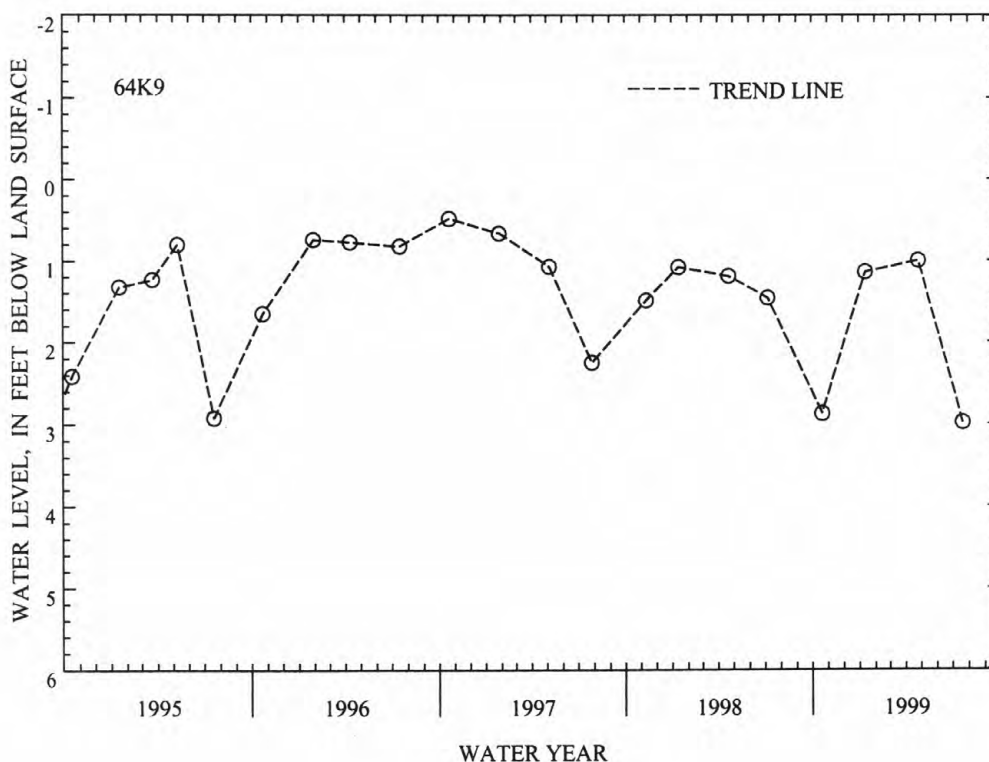
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--October 1977 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.32 ft below land-surface datum, Feb. 24, 1994; lowest measured, 3.46 ft below land-surface datum, Sept. 14, 1987.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	2.87	JAN 13	1.14	APR 26	1.00	JUL 21	2.98
WATER YEAR 1999	HIGHEST	1.00	APR 26, 1999				
	LOWEST	2.98	JUL 21, 1999				



GROUND-WATER LEVELS

ACCOMACK COUNTY

373932075452701. Local number, 64K 10 SOW 108A.

LOCATION.--Lat 37°39'32", long 75°45'27", Hydrologic Unit 02080109, 200 ft east of State Highway 609, 0.2 mi southeast of intersection of State Highways 609 and 627, and 0.9 mi northwest of Melfa. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 50 ft, screened 40 to 50 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 47 ft above sea level, from topographic map. Measuring point: Top of casing, 0.22 ft above land-surface datum prior to Mar. 1, 1988; 0.75 ft thereafter.

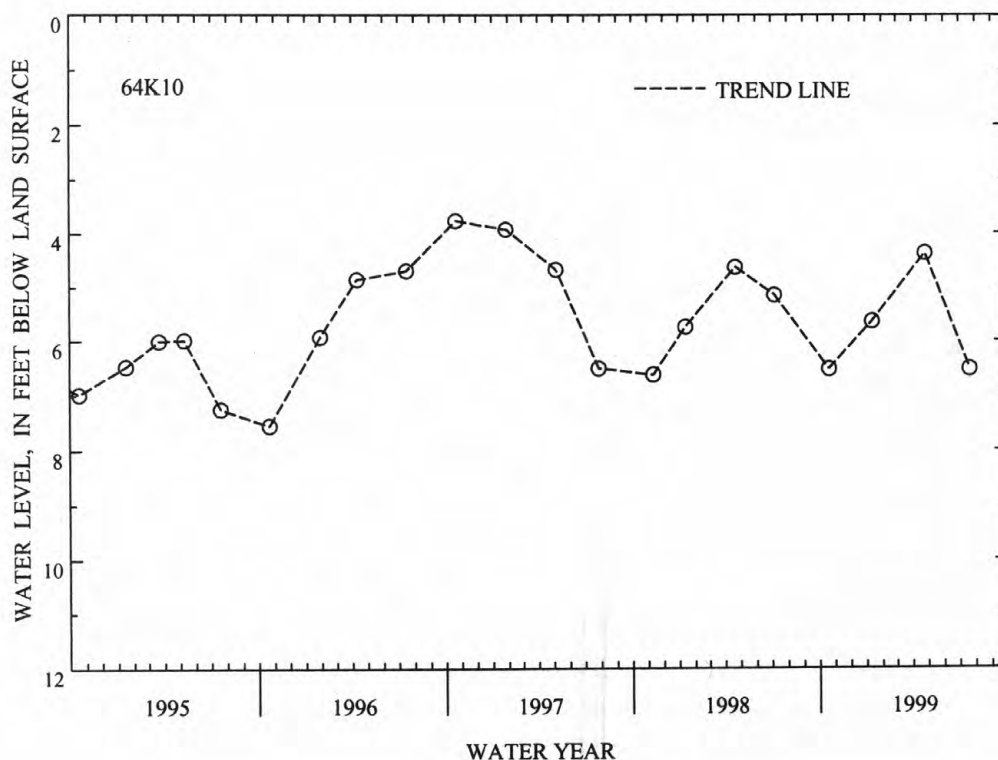
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--September 1978 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.98 ft below land-surface datum, Apr. 21, 1983; lowest measured, 15.06 ft below land-surface datum, Jan. 30, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	6.52	JAN 13	5.64	APR 26	4.38	JUL 21	6.52
WATER YEAR 1999		HIGHEST	4.38	APR 26, 1999			
		LOWEST	6.52	OCT 21, 1998, JUL 21, 1999			



GROUND-WATER LEVELS

ACCOMACK COUNTY

373932075452702. Local number, 64K 11 SOW 108B.

LOCATION.--Lat 37°39'32", long 75°45'27", Hydrologic Unit 02080109, 200 ft east of State Highway 609, 0.2 mi southeast of intersection of State Highways 609 and 627, and 0.9 mi northwest of Melfa. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 180 ft, screened 170 to 180 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 47 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

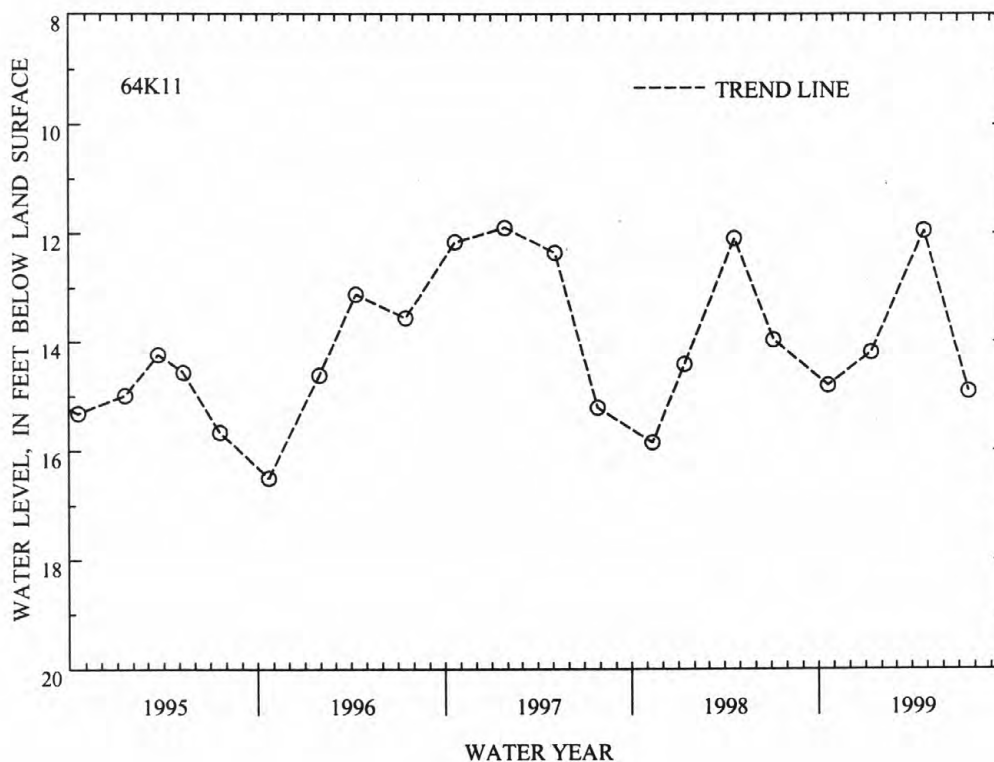
PERIOD OF RECORD.--September 1978 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.03 ft below land-surface datum, Aug. 1, 1979; lowest measured, 16.50 ft below land-surface datum, Oct. 23, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	14.80	JAN 13	14.19	APR 26	11.95	JUL 21	14.91

WATER YEAR 1999	HIGHEST	11.95	APR 26, 1999
	LOWEST	14.91	JUL 21, 1999



GROUND-WATER LEVELS

ACCOMACK COUNTY

373932075452703. Local number, 64K 12 SOW 108C.

LOCATION.--Lat 37°39'32", long 75°45'27", Hydrologic Unit 02080109, 200 ft east of State Highway 609, 0.2 mi southeast of intersection of State Highways 609 and 627, and 0.9 mi northwest of Melfa. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 284 ft, screened 274 to 284 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 47 ft above sea level, from topographic map. Measuring point: Top of casing, 0.5 ft above land-surface datum.

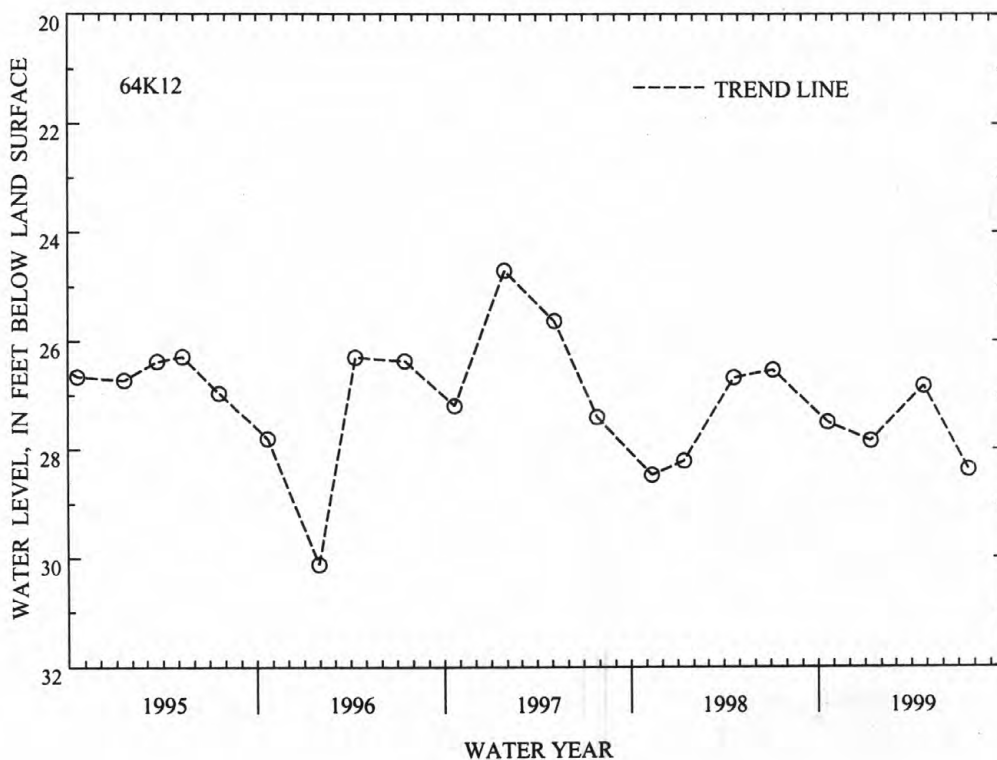
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level may be affected by local pumpage.

PERIOD OF RECORD.--September 1978 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.50 ft below land-surface datum, Feb. 2, 1984; lowest measured, 30.12 ft below land-surface datum, Jan. 30, 1996.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	27.50	JAN 13	27.84	APR 26	26.82	JUL 21	28.37
WATER YEAR 1999	HIGHEST	26.82	APR 26, 1999				
	LOWEST	28.37	JUL 21, 1999				



GROUND-WATER LEVELS

ACCOMACK COUNTY

374442075432501. Local number, 65K 23 SOW 109C.

LOCATION.--Lat 37°44'28", long 75°43'28", Hydrologic Unit 02080109, 50 ft north of State Highway 658, 0.1 mi northeast of intersection of State Highways 658 and 660, and 2.2 mi southeast of Deep Creek. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 290 ft, screened 280 to 290 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 13 ft above sea level, from topographic map. Measuring point: Top of casing, 0.3 ft above land-surface datum.

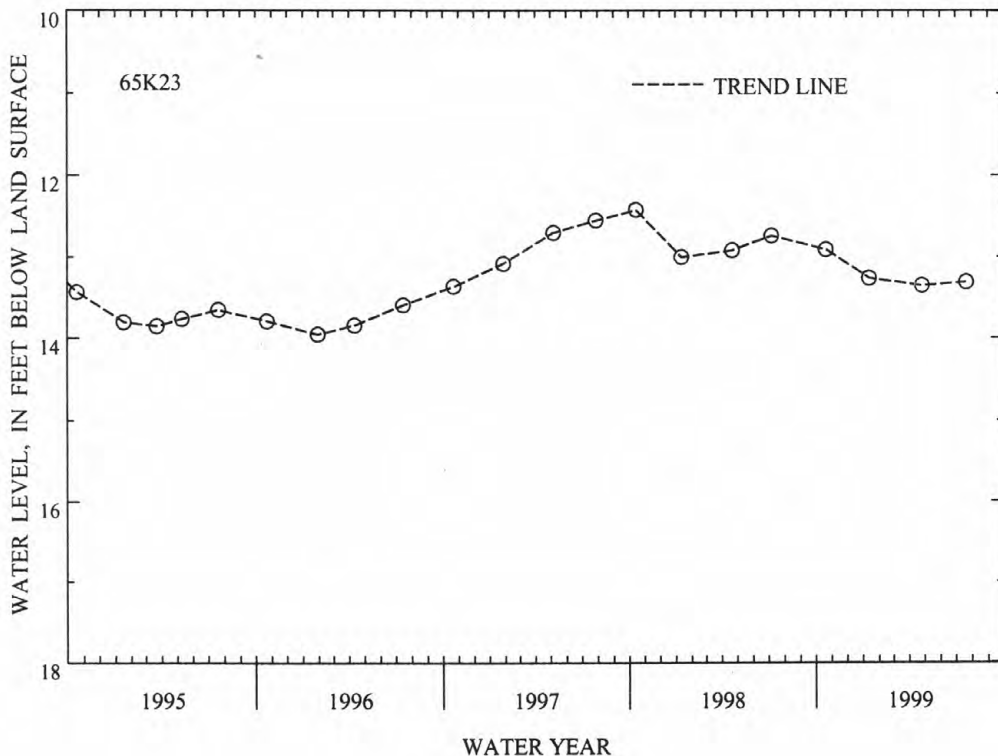
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level may be affected by local pumpage.

PERIOD OF RECORD.--June 1978 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.36 ft below land-surface datum, Dec. 30, 1982; lowest measured, 16.65 ft below land-surface datum, Mar. 12, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	12.91	JAN 13	13.26	APR 26	13.35	JUL 21	13.31
WATER YEAR 1999		HIGHEST	12.91	OCT 21, 1998			
		LOWEST	13.35	APR 26, 1999			



GROUND-WATER LEVELS

ACCOMACK COUNTY

374442075432502. Local number, 65K 24 SOW 109A.

LOCATION.--Lat 37°44'42", long 75°43'25", Hydrologic Unit 02080109, 50 ft north of State Highway 658, 0.1 mi northeast of intersection of State Highways 658 and 660, and 2.2 mi southeast of Deep Creek. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 130 ft, screened 120 to 130 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 13 ft above sea level, from topographic map. Measuring point: Top of casing, 0.8 ft above land-surface datum.

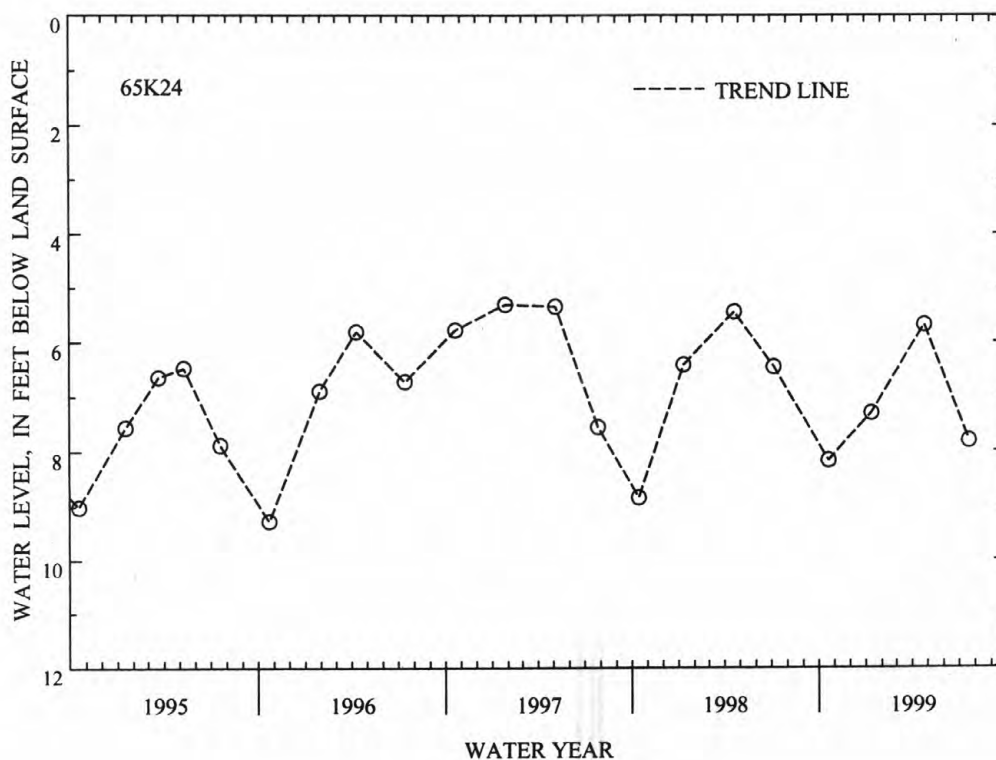
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--June 1978 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.35 ft below land-surface datum, Apr. 21, 1983; lowest measured, 9.27 ft below land-surface datum, Oct. 23, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	8.17	JAN 13	7.30	APR 26	5.68	JUL 21	7.81
WATER YEAR 1999	HIGHEST	5.68	APR 26, 1999				
	LOWEST	8.17	OCT 21, 1998				



GROUND-WATER LEVELS

ACCOMACK COUNTY

374442075432503. Local number, 65K 25 SOW 109B.

LOCATION.--Lat 37°44'42", long 75°43'25", Hydrologic Unit 02080109, 50 ft north of State Highway 658, 0.1 mi northeast of intersection of State Highways 658 and 660, and 2.2 mi southeast of Deep Creek. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 228 ft, screened 218 to 228 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 13 ft above sea level, from topographic map. Measuring point: Top of casing, 0.85 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level may be affected by local pumpage.

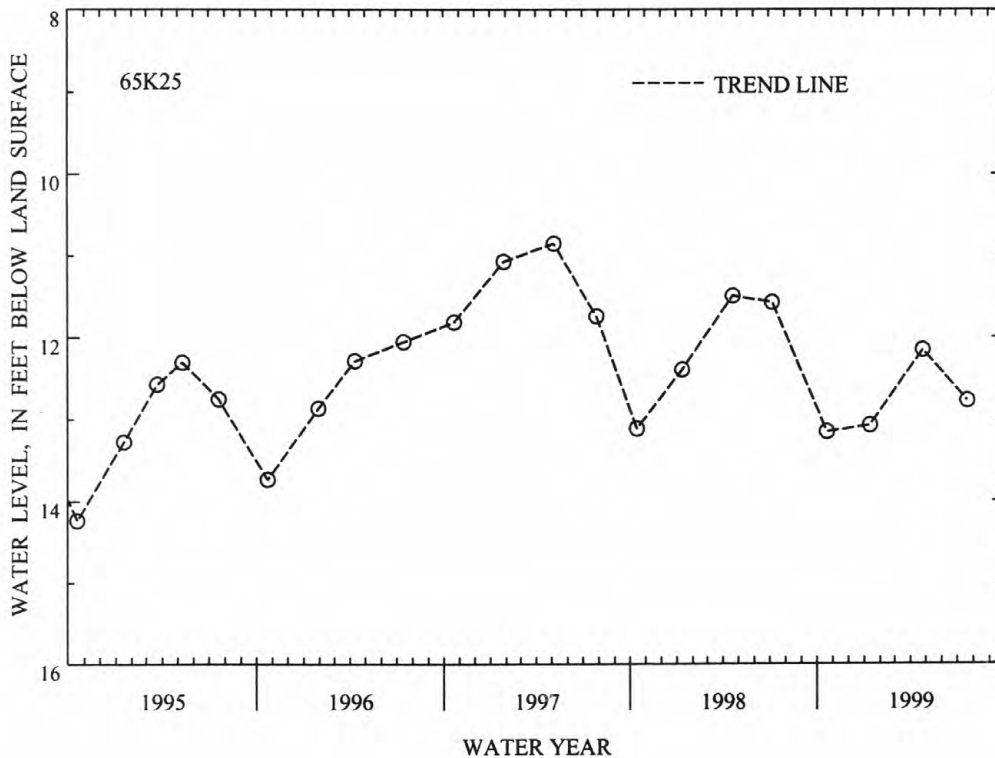
PERIOD OF RECORD.--June 1978 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.15 ft below land-surface datum, June 20, 1984; lowest measured, 14.34 ft below land-surface datum, Sept. 10, 1991.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	13.15	JAN 13	13.07	APR 26	12.15	JUL 21	12.77

WATER YEAR 1999	HIGHEST	12.15	APR 26, 1999
	LOWEST	13.15	OCT 21, 1998



GROUND-WATER LEVELS

ACCOMACK COUNTY

374442075432504. Local number, 65K 26 SOW 109S.

LOCATION.--Lat 37°44'42", long 75°43'25", Hydrologic Unit 02080109, 50 ft north of State Highway 658, 0.1 mi northeast of intersection of State Highways 658 and 660, and 2.2 mi southeast of Deep Creek. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 25 ft, screened 15 to 25 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 13 ft above sea level, from topographic map. Measuring point: Top of casing, 0.37 ft above land-surface datum prior to Mar. 1, 1988; 0.5 ft thereafter.

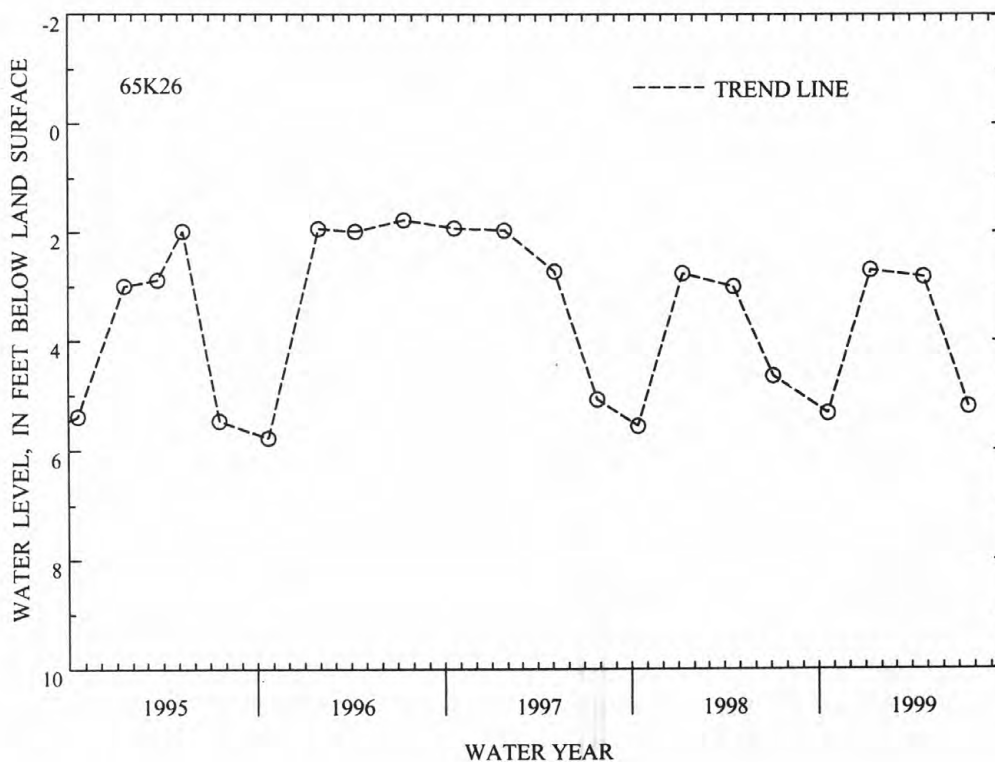
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--June 1978 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.03 ft below land-surface datum, Feb. 24, 1994; lowest measured, 6.57 ft below land-surface datum, Oct. 31, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	5.32	JAN 13	2.70	APR 26	2.82	JUL 21	5.20
WATER YEAR 1999	HIGHEST	2.70	JAN 13, 1999				
	LOWEST	5.32	OCT 21, 1998				



GROUND-WATER LEVELS

ACCOMACK COUNTY

374425075400001. Local number, 65K 27 SOW 114A.

LOCATION.--Lat 37°44'25", long 75°40'00", Hydrologic Unit 02080109, 0.2 mi northwest of intersection of State Highway 662 and U.S. Highway 13, 0.6 mi northwest of State Highway 662, and 0.9 mi east of Greenbush. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 160 ft, screened 150 to 160 ft.

INSTRUMENTATION.--Continuous strip-chart recorder. Prior to July 20, 1985, occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 45 ft above sea level, from topographic map. Measuring point: Top of recorder shelf, 1.4 ft above land-surface datum prior to Feb. 27, 1990; 1.5 ft thereafter.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage.

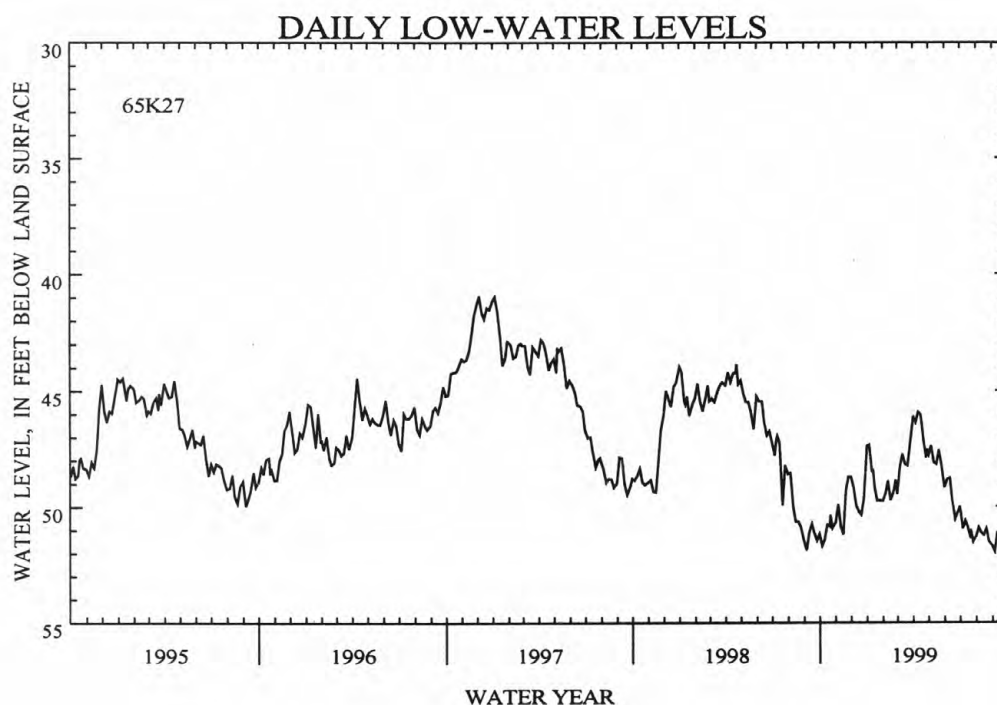
PERIOD OF RECORD.--March 1980 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 34.59 ft below land-surface datum, June 6, 1984; lowest measured, 52.07 ft below land-surface datum, Sept. 7, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	51.69	49.90	49.15	47.33	49.45	48.29	46.37	47.37	48.83	50.93	50.90	51.93
10	51.41	50.85	49.93	48.47	48.88	47.75	45.92	48.09	48.76	50.62	51.13	51.08
15	50.77	51.20	50.20	49.17	49.72	48.16	46.04	48.17	49.69	50.87	51.23	51.40
20	50.86	49.29	50.35	49.73	49.43	48.23	47.06	47.56	50.53	51.36	50.95	51.34
25	50.94	48.70	49.64	49.73	48.86	47.35	47.88	48.22	50.26	51.53	51.50	51.45
EOM	50.69	48.70	47.37	49.75	49.45	46.11	47.77	49.18	50.00	51.30	51.68	50.42

WATER YEAR 1999 HIGHEST INSTANTANEOUS 45.27 APR 08, 1999
 LOWEST INSTANTANEOUS 52.01 AUG 29, 30, 1999



GROUND-WATER LEVELS

ACCOMACK COUNTY

374425075400002. Local number, 65K 28 SOW 114B.

LOCATION.--Lat 37°44'25", long 75°40'00", Hydrologic Unit 02080109, 0.2 mi northwest of intersection of State Highway 662 and U.S. Highway 13, 0.6 mi northwest of State Highway 662, and 0.9 mi east of Greenbush. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 230 ft, screened 220 to 230 ft.

INSTRUMENTATION.--Continuous strip-chart recorder. Prior to July 20, 1985, occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 45 ft above sea level, from topographic map. Measuring point: Top of recorder shelf, 1.5 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Missing record due to recorder malfunction. Water level affected by local pumpage.

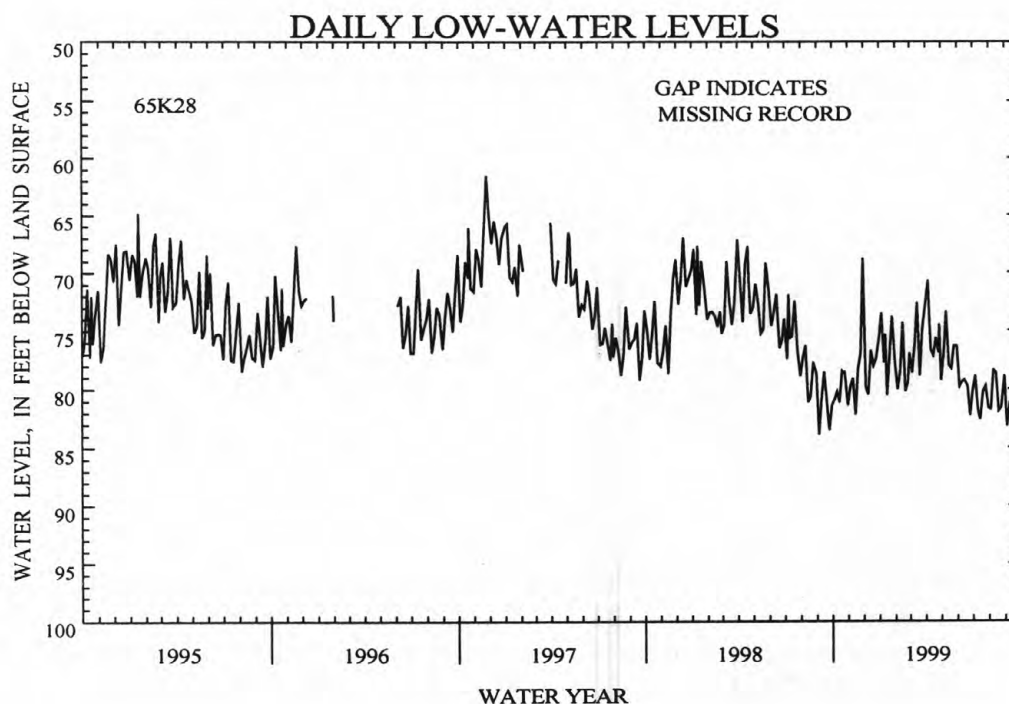
PERIOD OF RECORD.--March 1980 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 49.40 ft below land-surface datum, June 6, 1987; lowest recorded, 83.85 ft below land-surface datum, Sept. 5, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	80.90	79.75	79.79	73.50	80.00	78.60	70.70	77.05	79.80	78.85	81.69	83.15
10	80.25	79.10	80.45	77.75	78.50	76.25	76.59	73.35	79.35	81.75	78.40	81.15
15	81.09	82.15	76.70	80.50	74.30	72.60	77.10	77.90	79.20	82.55	78.59	81.00
20	78.48	78.18	78.00	77.15	80.15	78.85	75.60	78.20	79.70	80.16	81.85	78.25
25	78.50	76.95	77.40	73.80	79.40	74.90	76.85	76.30	82.20	79.75	81.55	82.65
EOM	81.35	68.80	75.45	77.85	76.90	72.50	79.25	76.30	80.30	81.60	78.85	80.50

WATER YEAR 1999	HIGHEST INSTANTANEOUS	66.25	MAR 30, 1999
	LOWEST INSTANTANEOUS	83.75	JUL 17, 1999



GROUND-WATER LEVELS

ACCOMACK COUNTY

374425075400004. Local number, 65K 30 SOW 114S.

LOCATION.--Lat 37°44'25", long 75°40'00", Hydrologic Unit 02080109, 0.2 mi northwest of intersection of State Highway 662 and U.S. Highway 13, 0.6 mi northwest of State Highway 662, and 0.9 mi east of Greenbush. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 40 ft, screened 30 to 40 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 45 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum prior to Mar. 1, 1988; 1.5 ft thereafter.

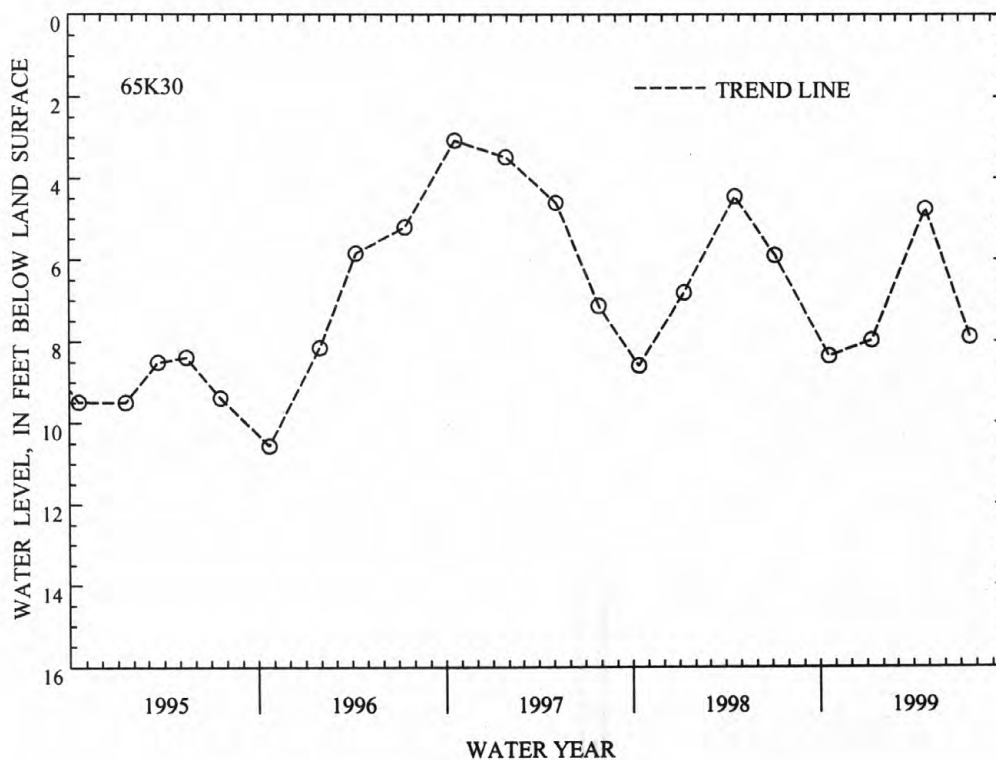
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--March 1980 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.06 ft below land-surface datum, Oct. 21, 1996; lowest measured, 20.10 ft below land-surface datum, Dec. 9, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	8.35	JAN 12	7.96	APR 27	4.75	JUL 21	7.88
WATER YEAR 1999	HIGHEST	4.75	APR 27, 1999				
	LOWEST	8.35	OCT 21, 1998				



GROUND-WATER LEVELS

ACCOMACK COUNTY

374314075401402. Local number, 65K 59 SOW 183A.

LOCATION.--Lat 37°43'14", long 75°40'14", Hydrologic Unit 02080109, at Accomac, 500 ft north of U.S. Highway 13 (Business), 700 ft east of intersection of State Highway 764, and U.S. Highway 13 (Business). Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in. to 250 ft, diameter 2 in. from 250 to 285 ft, depth 285 ft, screened 275 to 285 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Aug. 6, 1990 to Jan. 28, 1997, continuous strip-chart recorder. Prior to Aug. 7, 1990, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 35 ft above sea level, from topographic map. Measuring point: Top of casing, 1.2 ft above land-surface datum.

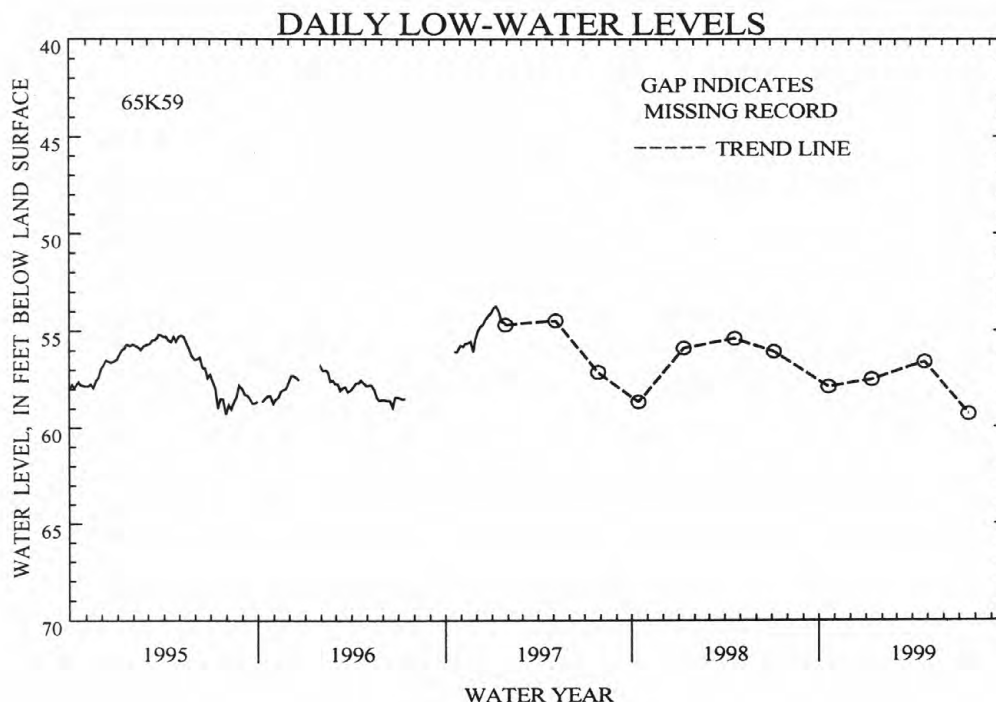
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level may be affected by local pumpage. Missing record due to recorder malfunction.

PERIOD OF RECORD.--May 1990 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 52.28 ft below land-surface datum, Jan. 13, 1993; lowest recorded, 61.24 ft below land-surface datum, Sept. 29, 1991.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	57.87	JAN 13	57.50	APR 26	56.60	JUL 20	59.30
WATER YEAR 1999	HIGHEST	56.60	APR 26, 1999				
	LOWEST	59.30	JUL 20, 1999				



GROUND-WATER LEVELS

ACCOMACK COUNTY

374314075401403. Local number, 65K 60 SOW 183B.

LOCATION.--Lat 37°43'14", long 75°40'14", Hydrologic Unit 02080109, at Accomac, 500 ft north of U.S. Highway 13 (Business), 700 ft east of intersection of State Highway 764, and U.S. Highway 13 (Business). Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in. to 210 ft, diameter 2 in. from 210 to 235 ft, depth 235 ft, screened 225 to 235 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 20, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 35 ft above sea level, from topographic map. Measuring point: Top of casing, 1.3 ft above land-surface datum.

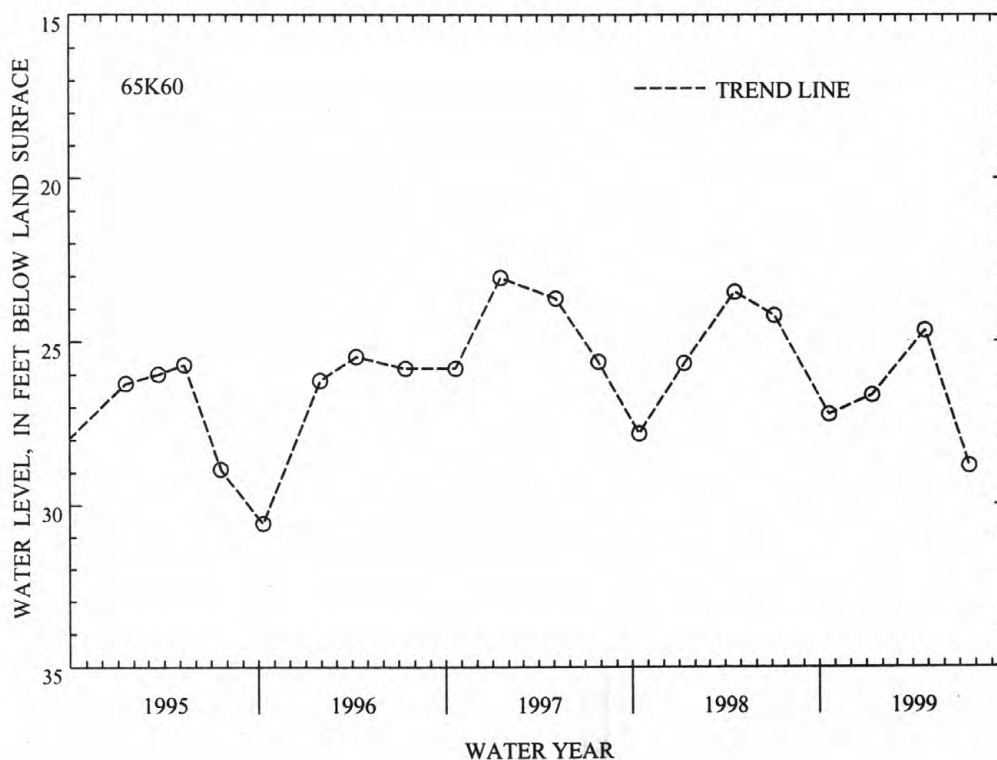
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level may be affected by local pumpage.

PERIOD OF RECORD.--May 1990 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 21.50 ft below land-surface datum, May 7, 1990; lowest measured, 30.57 ft below land-surface datum, Oct. 10, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	27.22	JAN 13	26.63	APR 26	24.66	JUL 20	28.80
WATER YEAR 1999	HIGHEST	24.66	APR 26, 1999				
	LOWEST	28.80	JUL 20, 1999				



GROUND-WATER LEVELS

ACCOMACK COUNTY

374314075401404. Local number, 65K 61 SOW 183C.

LOCATION.--Lat 37°43'14", long 75°40'14", Hydrologic Unit 02080109, at Accomac, 500 ft north of U.S. Highway 13 (Business), 700 ft east of intersection of State Highway 764, and U.S. Highway 13 (Business). Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in. to 82 ft, diameter 2 in. from 82 to 134 ft, depth 134 ft, screened 124 to 134 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Aug. 6, 1990 to Jan. 28, 1997, continuous strip-chart recorder. Prior to Aug. 6, 1990, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 35 ft above sea level, from topographic map. Measuring point: Top of casing, 1.1 ft above land-surface datum.

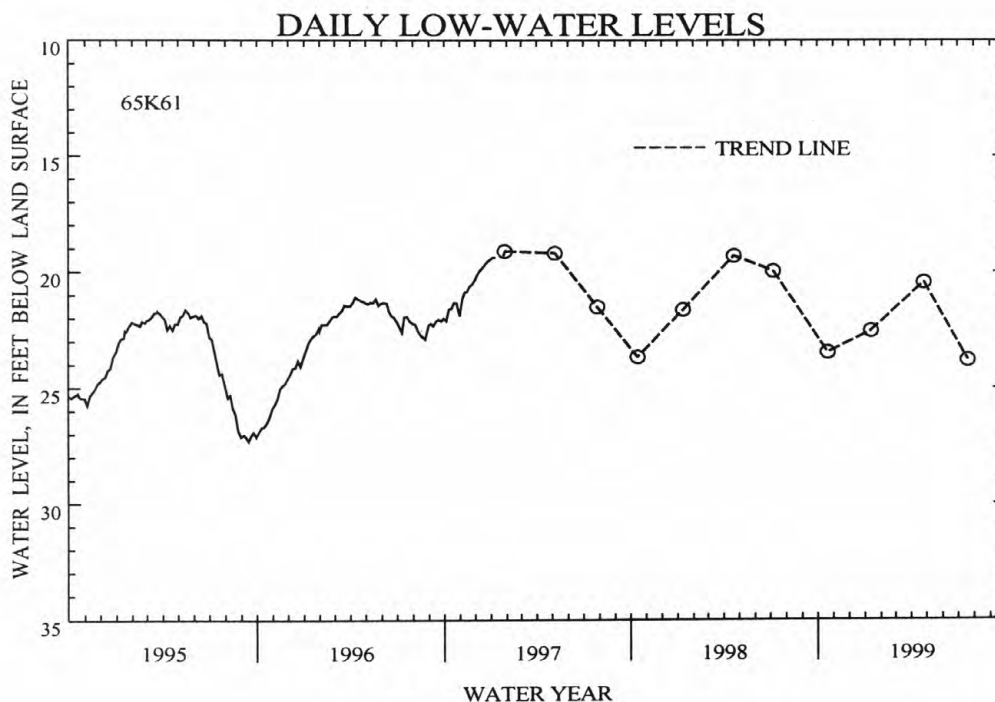
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level may be affected by local pumpage.

PERIOD OF RECORD.--May 1990 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 18.20 ft below land-surface datum, May 7, 1990; lowest recorded, 27.32 ft below land-surface datum, Sept. 13, 14, 1995.

WATER LEVEL IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	23.45	JAN 13	22.52	APR 26	20.44	JUL 20	23.78
WATER YEAR 1999	HIGHEST	20.44	APR 26, 1999				
	LOWEST	23.78	JUL 20, 1999				



GROUND-WATER LEVELS

ACCOMACK COUNTY

374314075401405. Local number, 65K 62 SOW 183D.

LOCATION.--Lat 37°43'14", long 75°40'14", Hydrologic Unit 02080109, at Accomac, 500 ft north of U.S. Highway 13 (Business), 700 ft east of intersection of State Highway 764, and U.S. Highway 13 (Business). Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 20 ft, screened 15 to 20 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 20, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 35 ft above sea level, from topographic map. Measuring point: Top of casing, 1.3 ft above land-surface datum.

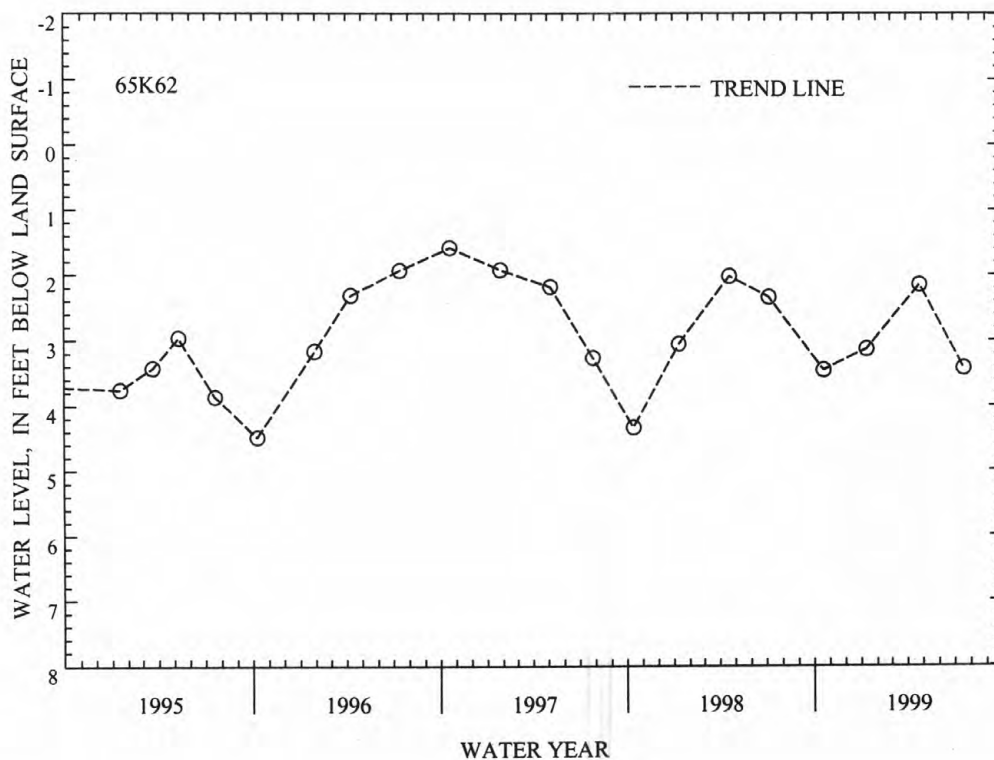
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--May 1990 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.09 ft below land-surface datum, Jan. 4, 1993; lowest measured, 4.48 ft below land-surface datum, Oct. 10, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	3.45	JAN 13	3.13	APR 26	2.15	JUL 20	3.42
WATER YEAR 1999	HIGHEST	2.15	APR 26, 1999				
	LOWEST	3.45	OCT 21, 1998				



GROUND-WATER LEVELS

ACCOMACK COUNTY

374320075380501. Local number, 66K 2 SOW 101C.

LOCATION.--Lat 37°43'19", long 75°36'54", Hydrologic Unit 02080110, 0.2 mi north of State Highway 662, 2.2 mi east of intersection of State Highway 662 and U.S. Highway 13 (Business), and 2.8 mi east of Accomac. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 292 ft, screened 282 to 292 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 10 ft above sea level, from topographic map. Measuring point: Top of casing, 0.4 ft above land-surface datum prior to Mar. 1, 1988; 0.6 ft thereafter.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage.

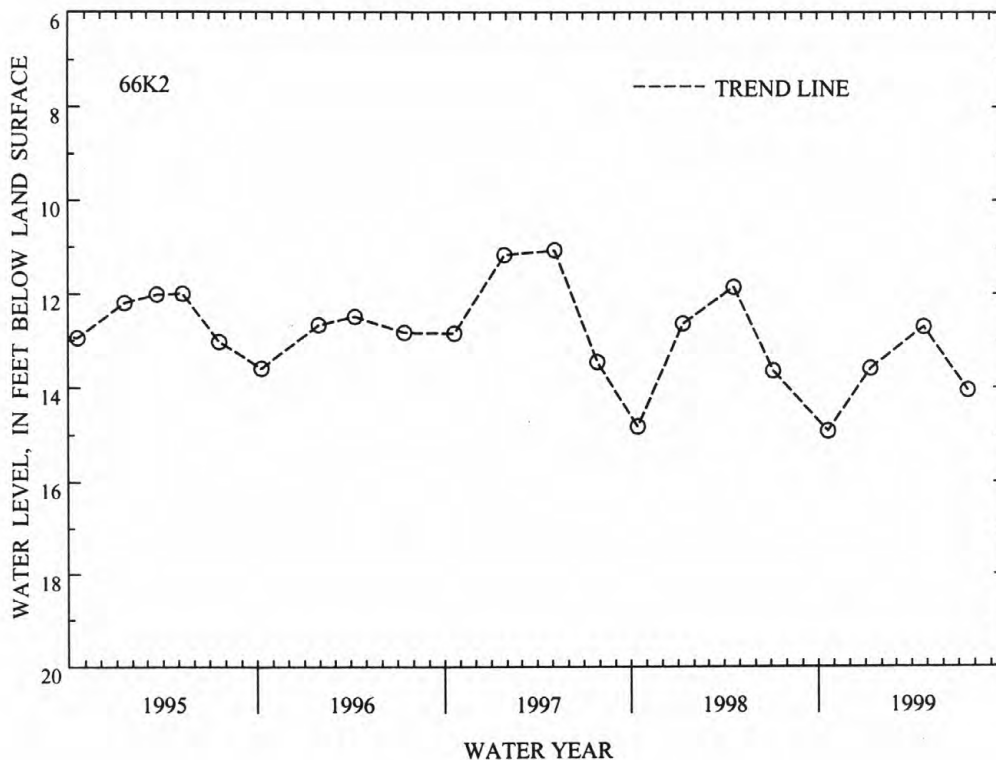
PERIOD OF RECORD.--June 1977 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.57 ft below land-surface datum, Apr. 25, 1984; lowest measured, 17.30 ft below land-surface datum, Aug. 5, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	14.92	JAN 12	13.59	APR 26	12.70	JUL 20	14.05

WATER YEAR 1999	HIGHEST	12.70	APR 26, 1999
	LOWEST	14.92	OCT 21, 1998



GROUND-WATER LEVELS

ACCOMACK COUNTY

374320075365602. Local number, 66K 3 SOW 101B.

LOCATION.--Lat 37°43'20", long 75°38'05", Hydrologic Unit 02080110, 0.2 mi north of State Highway 662, 2.2 mi east of intersection of State Highway 662 and U.S. Highway 13 (Business), and 2.8 mi east of Accomac. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 220 ft, screened 210 to 220 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 8 ft above sea level, from topographic map. Measuring point: Top of casing, 0.36 ft above land-surface datum prior to Mar. 1, 1988; 0.65 ft thereafter.

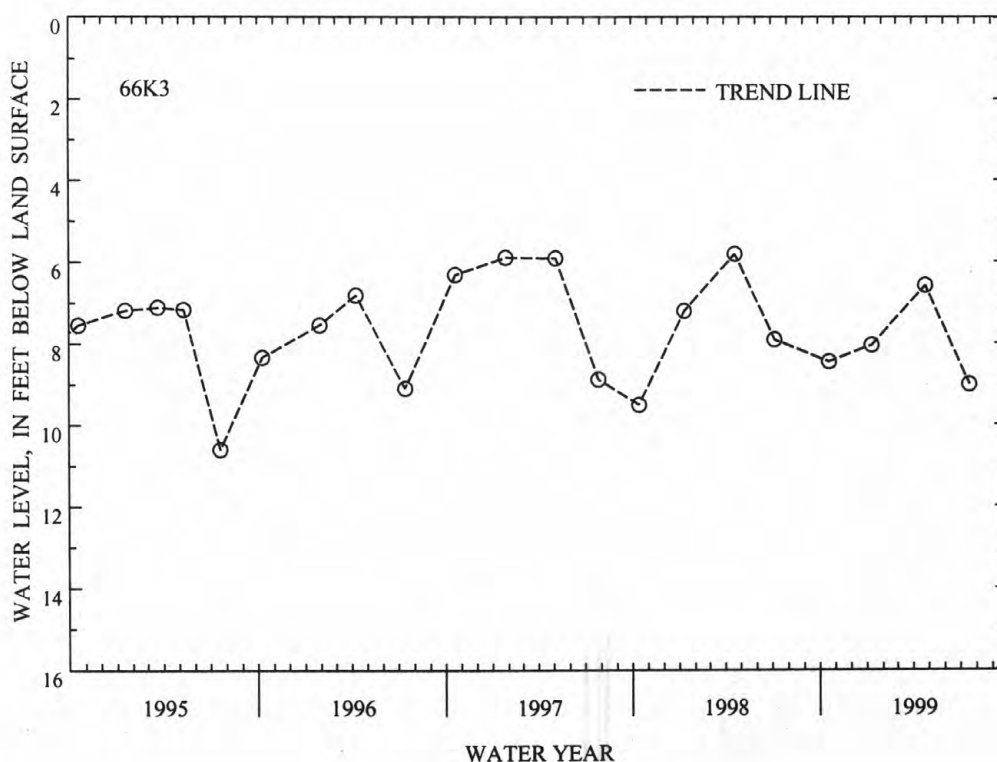
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage.

PERIOD OF RECORD.--June 1977 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.04 ft below land-surface datum, Apr. 25, 1984; lowest measured, 10.60 ft below land-surface datum, July 20, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	8.44	JAN 12	8.04	APR 26	6.58	JUL 20	9.00
WATER YEAR 1999		HIGHEST	6.58	APR 26, 1999			
		LOWEST	9.00	JUL 20, 1999			



GROUND-WATER LEVELS

ACCOMACK COUNTY

374320075365603. Local number, 66K 4 SOW 101A.

LOCATION.--Lat 37°43'20", long 75°36'56", Hydrologic Unit 02080110, 0.2 mi north of State Highway 662, 2.2 mi east of intersection of State Highway 662 and U.S. Highway 13 (Business), and 2.8 mi east of Accomac. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 152 ft, screened 142 to 152 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 10 ft above sea level, from topographic map. Measuring point: Top of casing, 0.4 ft above land-surface datum prior to Mar. 1, 1988; 0.65 ft Mar. 1, 1988, to June 20, 1989; at land-surface datum June 21, 1989, to Jan. 3, 1990; 0.85 ft above land-surface datum thereafter.

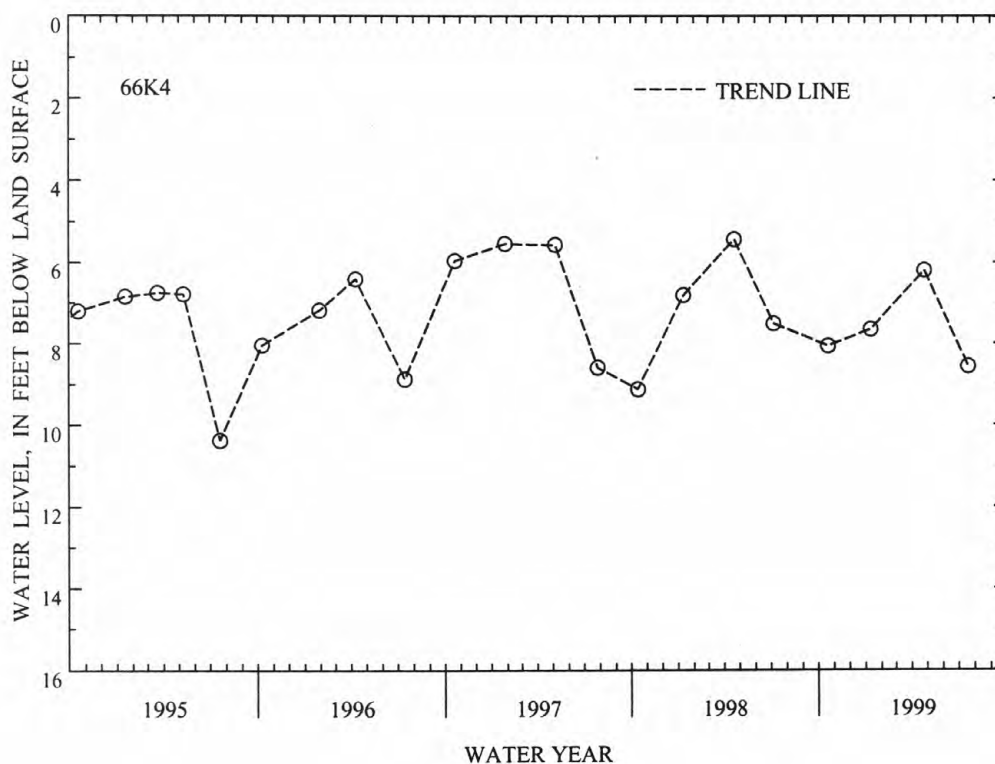
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage.

PERIOD OF RECORD.--June 1977 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.99 ft below land-surface datum, Apr. 25, 1984; lowest measured, 10.37 ft below land-surface datum, July 20, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	8.06	JAN 12	7.65	APR 26	6.20	JUL 20	8.56
WATER YEAR 1999	HIGHEST	6.20	APR 26, 1999				
	LOWEST	8.56	JUL 20, 1999				



GROUND-WATER LEVELS

ACCOMACK COUNTY

375225075321701. Local number, 66L 1 SOW 107C.

LOCATION.--Lat 37°52'25", long 75°32'17", Hydrologic Unit 02080110, 0.15 mi northwest of State Highway 679, 0.45 mi northeast of intersection of State Highways 679 and 790, and 0.7 mi west of Assawoman. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 305 ft, screened 295 to 305 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 6 ft above sea level, from topographic map. Measuring point: Top of casing, 0.33 ft above land-surface datum prior to Mar. 1, 1988; 0.4 ft thereafter.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

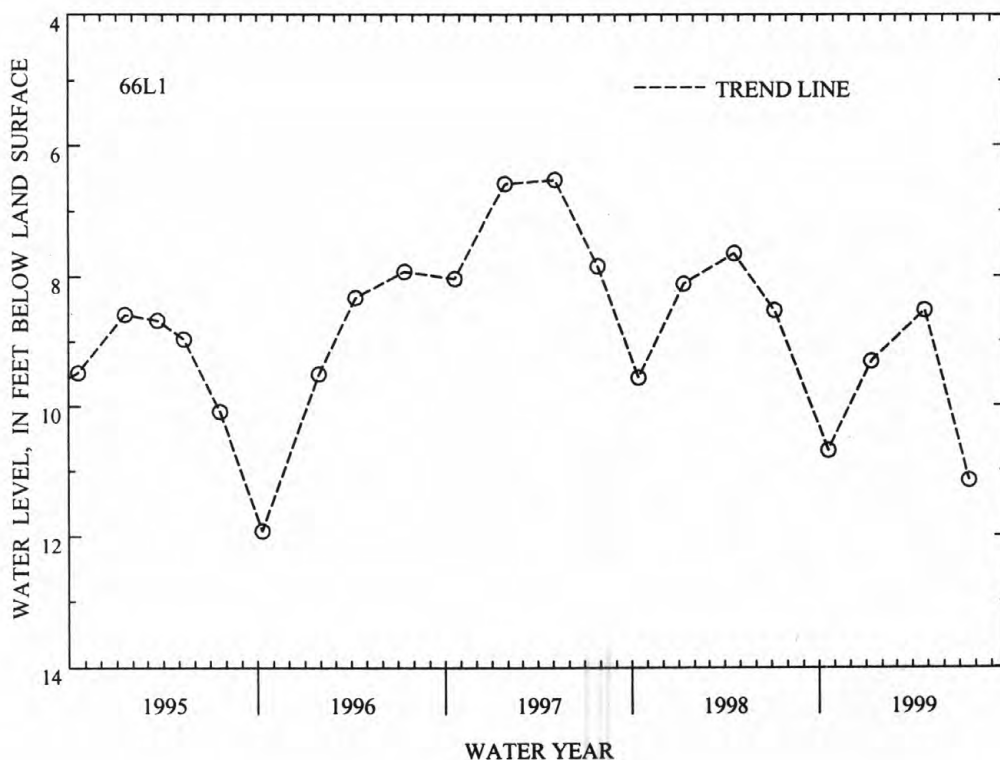
PERIOD OF RECORD.--September 1977 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.06 ft below land-surface datum, Jan. 4, 1984; lowest measured, 11.92 ft below land-surface datum, Oct. 10, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	10.69	JAN 12	9.31	APR 26	8.52	JUL 20	11.15

WATER YEAR 1999	HIGHEST	8.52	APR 26, 1999
	LOWEST	11.15	JUL 20, 1999



GROUND-WATER LEVELS

ACCOMACK COUNTY

375225075321702. Local number, 66L 2 SOW 107A.

LOCATION.--Lat 37°52'25", long 75°32'17", Hydrologic Unit 02080110, 0.15 mi northwest of State Highway 679, 0.45 mi northeast of intersection of State Highways 679 and 790, and 0.7 mi west of Assawoman. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 140 ft, screened 130 to 140 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 5 ft above sea level, from topographic map. Measuring point: Top of casing, 0.23 ft above land-surface datum prior to Mar. 1, 1988; 0.6 ft thereafter.

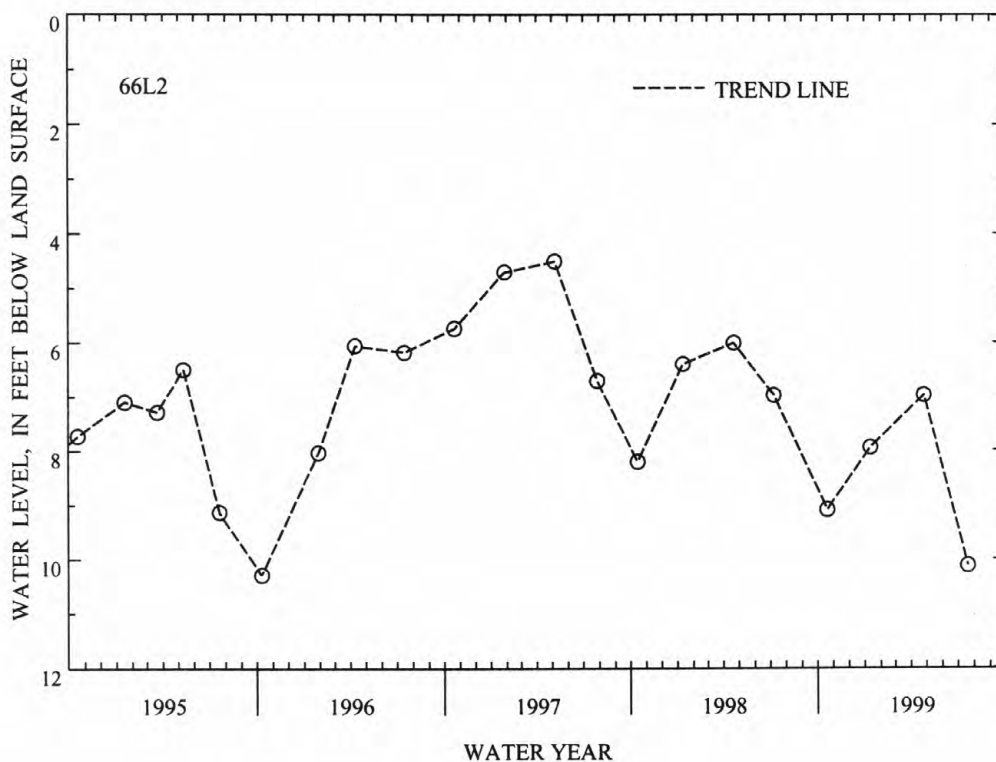
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--October 1977 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.21 ft below land-surface datum, Apr. 25, 1984; lowest measured, 10.29 ft below land-surface datum, Oct. 10, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	9.09	JAN 12	7.94	APR 26	6.97	JUL 20	10.12
WATER YEAR 1999	HIGHEST	6.97	APR 26, 1999				
	LOWEST	10.12	JUL 20, 1999				



GROUND-WATER LEVELS

ACCOMACK COUNTY

375225075321703. Local number, 66L 3 SOW 107B.

LOCATION.--Lat 37°52'25", long 75°32'17", Hydrologic Unit 02080110, 0.15 mi northwest of State Highway 679, 0.45 mi northeast of intersection of State Highways 679 and 790, and 0.7 mi west of Assawoman. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 206 ft, screened 191 to 201 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 5 ft above sea level, from topographic map. Measuring point: Top of casing, 1.1 ft above land-surface datum prior to June 19, 1990; 0.3 ft thereafter.

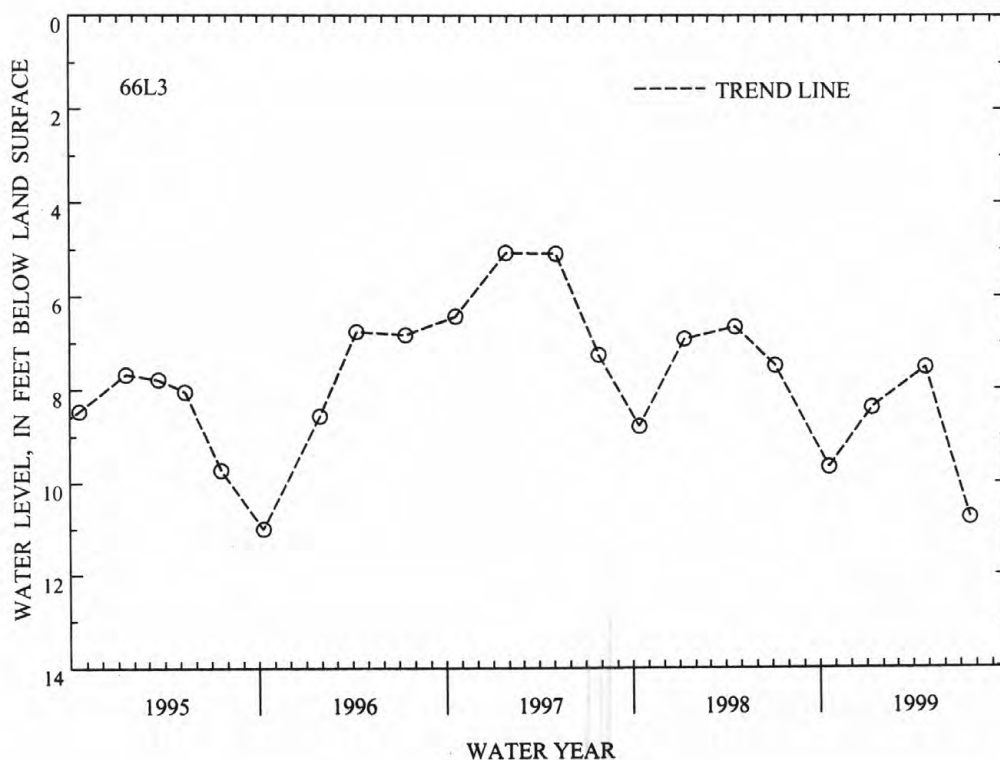
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--October 1977 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.64 ft below land-surface datum, Apr. 25, 1984; lowest measured, 11.00 ft below land-surface datum, Oct. 10, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	9.66	JAN 12	8.38	APR 26	7.52	JUL 20	10.76
WATER YEAR 1999	HIGHEST	7.52	APR 26, 1999				
	LOWEST	10.76	JUL 20, 1999				



GROUND-WATER LEVELS

ACCOMACK COUNTY

375723075344401. Local number, 66M 16 SOW 110A.

LOCATION.--Lat 37°57'23", long 75°34'44", Hydrologic Unit 02060009, 0.25 mi northeast of State Highway 693, 0.5 mi southeast of intersection of State Highways 693 and 706, and 2.3 mi northwest of Oak Hall. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 130 ft, screened 120 to 130 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 11 ft above sea level, from topographic map. Measuring point: Top of casing, 0.45 ft above land-surface datum prior to Feb. 29, 1988; 0.65 ft Mar. 1, 1988, to Oct. 3, 1989; at land surface datum Oct. 4, 1989, to Jan. 3, 1990; 1.0 ft above land-surface datum Jan. 4, 1990, to Oct. 10, 1990; 0.70 ft thereafter.

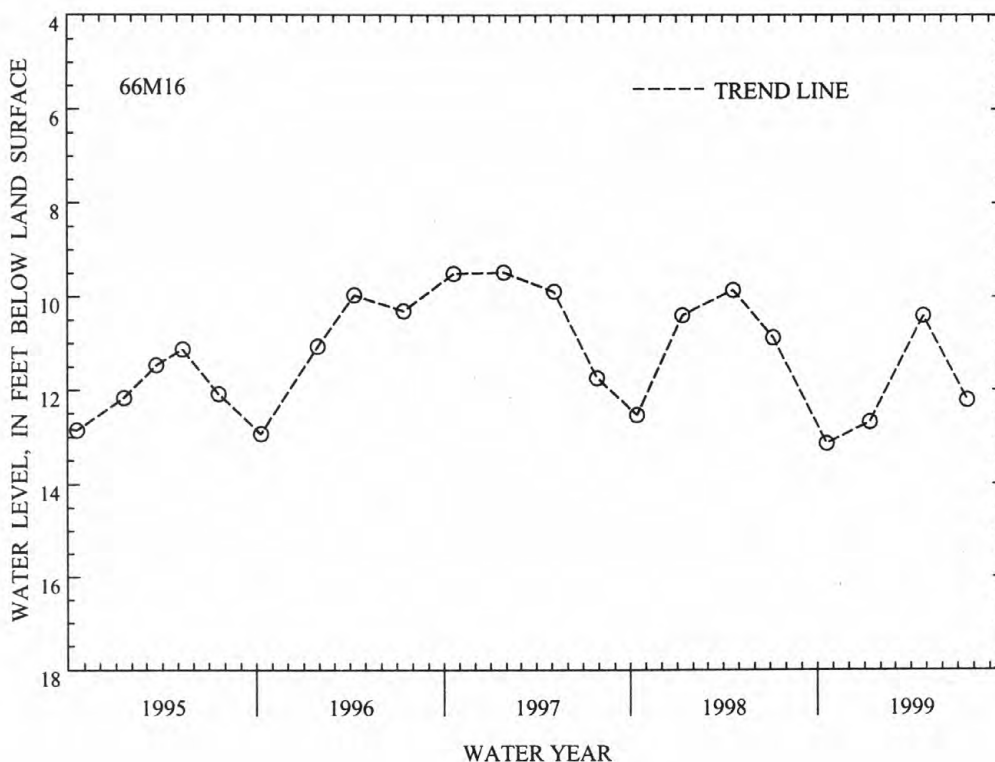
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage.

PERIOD OF RECORD.--September 1978 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.28 ft below land-surface datum, Feb. 19, 1986; lowest measured, 13.14 ft below land-surface datum, Oct. 20, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	13.14	JAN 12	12.68	APR 26	10.40	JUL 20	12.21
WATER YEAR 1999	HIGHEST	10.40	APR 26, 1999				
	LOWEST	13.14	OCT 20, 1998				



GROUND-WATER LEVELS

ACCOMACK COUNTY

375723075344402. Local number, 66M 17 SOW 110B.

LOCATION.--Lat 37°57'23", long 75°34'44", Hydrologic Unit 02060009, 0.25 mi northeast of State Highway 693, 0.5 mi southeast of intersection of State Highways 693 and 706, and 2.3 mi northwest of Oak Hall. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 178 ft, screened 168 to 178 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 11 ft above sea level, from topographic map. Measuring point: Top of casing, 0.45 ft above land-surface datum prior to Feb. 29, 1988; 0.75 ft thereafter.

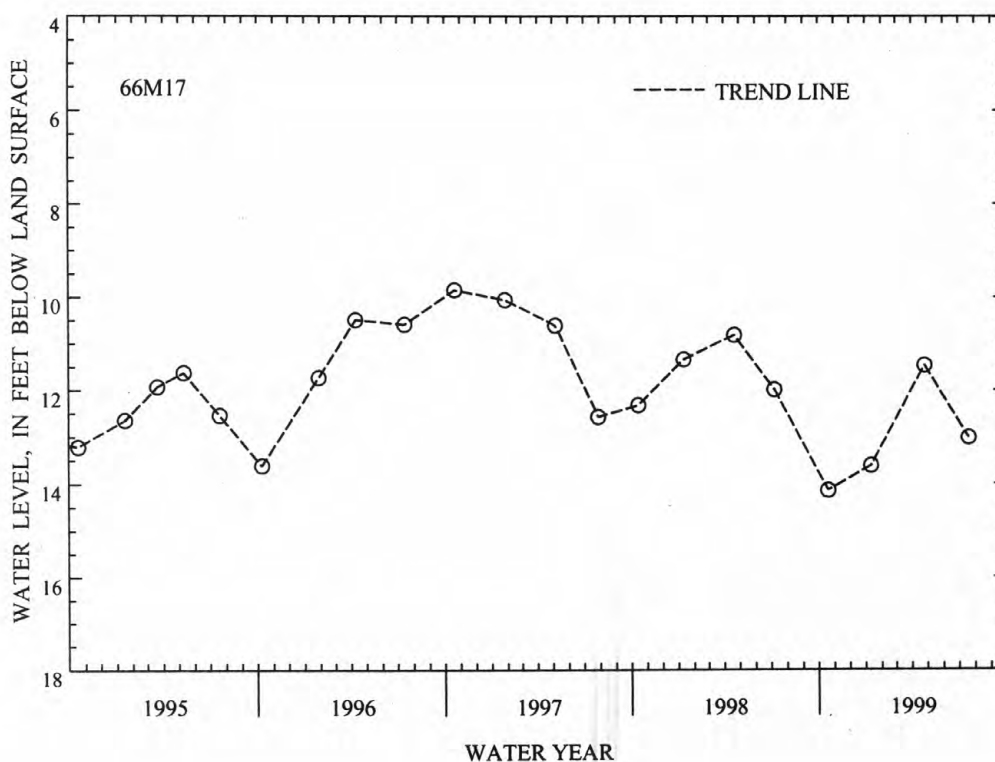
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage.

PERIOD OF RECORD.--October 1978 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.76 ft below land-surface datum, Apr. 1, 1980; lowest measured, 14.14 ft below land-surface datum, Oct. 20, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
* OCT 20	14.14	JAN 12	13.61	APR 26	11.46	JUL 20	13.01
WATER YEAR 1999	HIGHEST	11.46	APR 26, 1999				
	LOWEST	14.14	OCT 20, 1998				



GROUND-WATER LEVELS

ACCOMACK COUNTY

375723075344403. Local number, 66M 18 SOW 110C.

LOCATION.--Lat 37°57'23", long 75°34'44", Hydrologic Unit 02060009, 0.25 mi northeast of State Highway 693, 0.5 mi southeast of intersection of State Highways 693 and 706, and 2.3 mi northwest of Oak Hall. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 240 ft, screened 230 to 240 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 11 ft above sea level, from topographic map. Measuring point: Top of casing, 0.65 ft above land-surface datum.

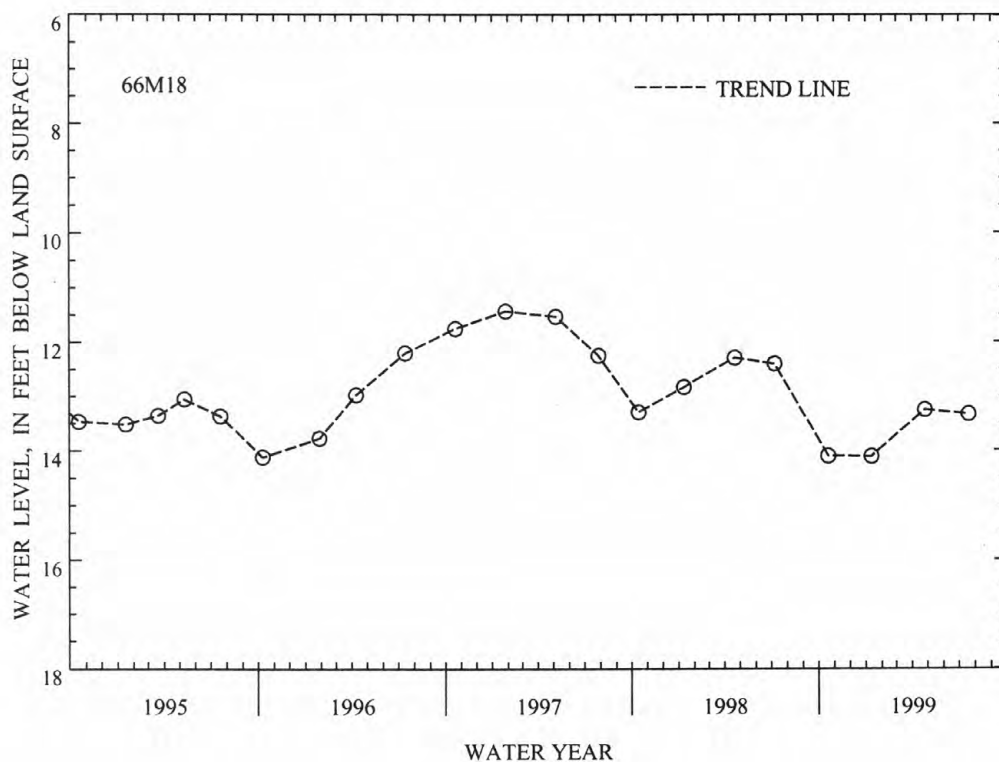
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

PERIOD OF RECORD.--October 1978 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.43 ft below land-surface datum, Aug. 12, 1981; lowest measured, 14.12 ft below land-surface datum, Oct. 10, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	14.10	JAN 12	14.11	APR 26	13.25	JUL 20	13.33
WATER YEAR 1999	HIGHEST	13.25	APR 26, 1999				
	LOWEST	14.11	JAN 12, 1999				



GROUND-WATER LEVELS

ACCOMACK COUNTY

375723075344404. Local number, 66M 19 SOW 110S.

LOCATION.--Lat 37°57'23", long 75°34'44", Hydrologic Unit 02060009, 0.25 mi northeast of State Highway 693, 0.5 mi southeast of intersection of State Highways 693 and 706, and 2.3 mi northwest of Oak Hall. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 36 ft, screened 26 to 36 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 11 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum prior to Feb. 29, 1988; 0.35 ft thereafter.

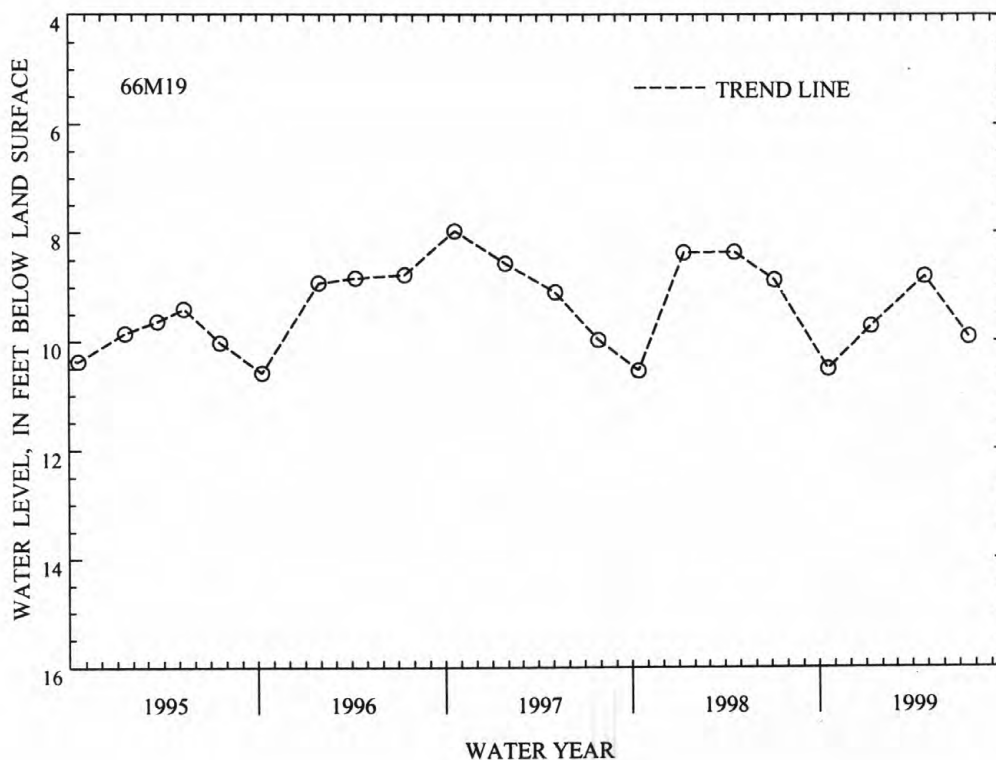
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--September 1978 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.97 ft below land-surface datum, Oct. 21, 1996; lowest measured, 11.34 ft below land-surface datum, Nov. 6, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	10.51	JAN 12	9.72	APR 26	8.80	JUL 20	9.92
WATER YEAR 1999	HIGHEST	8.80	APR 26, 1999				
	LOWEST	10.51	OCT 20, 1998				



GROUND-WATER LEVELS

ACCOMACK COUNTY

375610075361801. Local number, 66M 23 SOW 181A.

LOCATION.--Lat 37°56'10", long 75°36'18", Hydrologic Unit 02080109, 100 ft south of State Highway 703, 0.1 mi east of intersection of State Highways 701 and 703, and 2.7 mi northwest of Makemie Park. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 1,300 ft, screened 1,290 to 1,300 ft.

INSTRUMENTATION.--Occasional measurement with manometer or chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 20, 1995, bimonthly measurement with manometer or chalked tape.

DATUM.--Elevation of land-surface datum is 6 ft above sea level, from topographic map. Measuring point: Top of casing, 1.5 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional pumpage. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

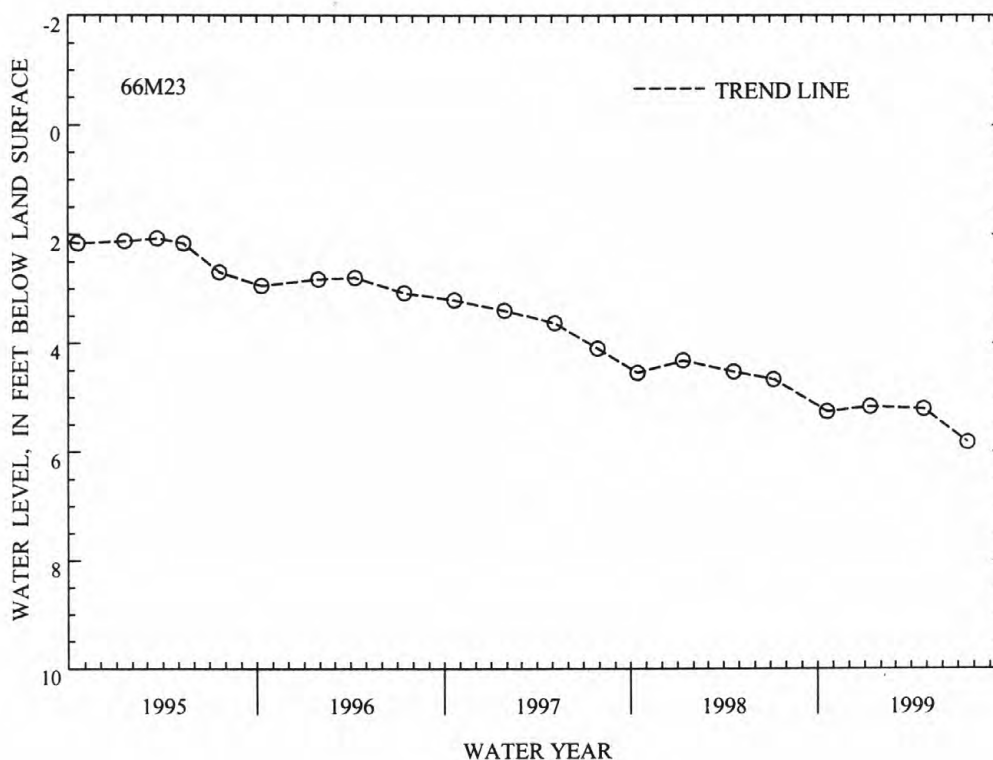
PERIOD OF RECORD.--January 1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.38 ft above land-surface datum, Jan. 26, 1988; lowest measured, 5.82 ft below land-surface datum, July 20, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	5.25	JAN 12	5.16	APR 26	5.20	JUL 20	5.82

WATER YEAR 1999	HIGHEST	5.16	JAN 12, 1999
	LOWEST	5.82	JUL 20, 1999



GROUND-WATER LEVELS

ACCOMACK COUNTY

375610075361802. Local number, 66M 24 SOW 181B.

LOCATION.--Lat 37°56'10", long 75°36'18", Hydrologic Unit 02080109, 100 ft south of State Highway 703, 0.1 mi east of intersection of State Highways 701 and 703, and 2.7 mi northwest of Makemie Park. Owner: Virginia Department of Environmental Quality.

AQUIFER.--St. Marys-Choptank aquifer of Miocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 508 ft, screened 498 to 508 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 20, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 6 ft above sea level, from topographic map. Measuring point: Top of casing, 0.85 ft above land-surface datum.

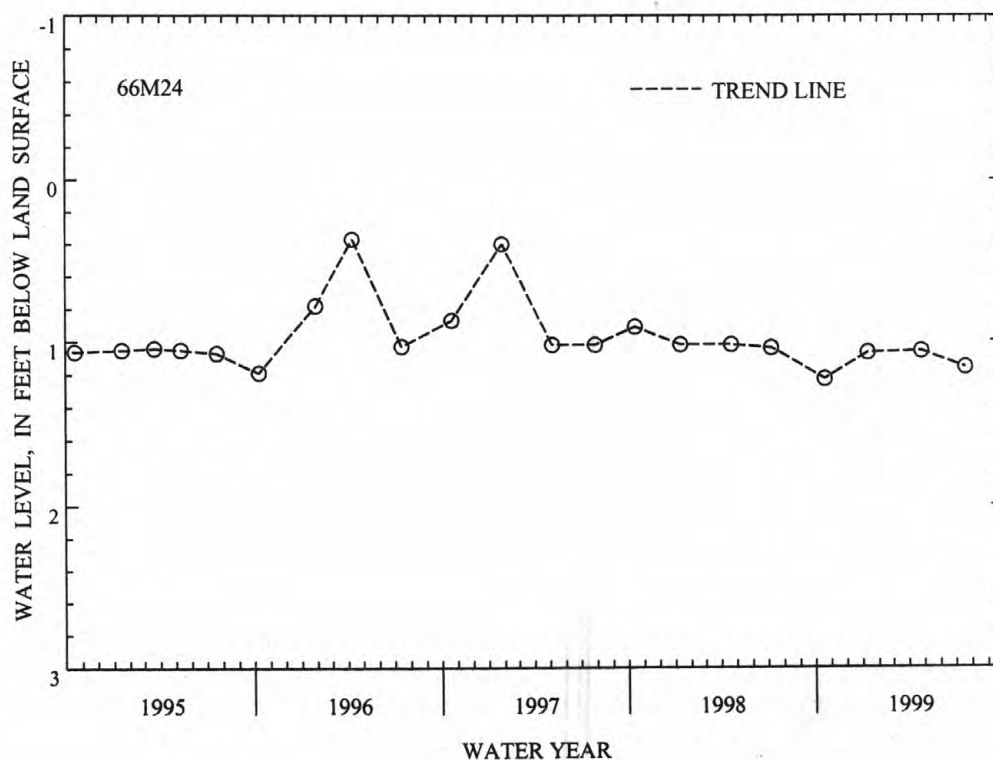
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

PERIOD OF RECORD.--October 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.25 ft below land-surface datum, Mar. 7, 1989; lowest measured, 1.25 ft below land-surface datum, June 19, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	1.23	JAN 12	1.07	APR 26	1.06	JUL 20	1.16
WATER YEAR 1999	HIGHEST	1.06	APR 26, 1999				
	LOWEST	1.23	OCT 20, 1998				



GROUND-WATER LEVELS

ACCOMACK COUNTY

375610075361803. Local number, 66M 25 SOW 181C.

LOCATION.--Lat 37°56'10", long 75°36'18", Hydrologic Unit 02080109, 100 ft south of State Highway 703, 0.1 mi east of intersection of State Highways 701 and 703, and 2.7 mi northwest of Makemie Park. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 340 ft, screened 330 to 340 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 20, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 6 ft above sea level, from topographic map. Measuring point: Top of casing, 0.95 ft above land-surface datum.

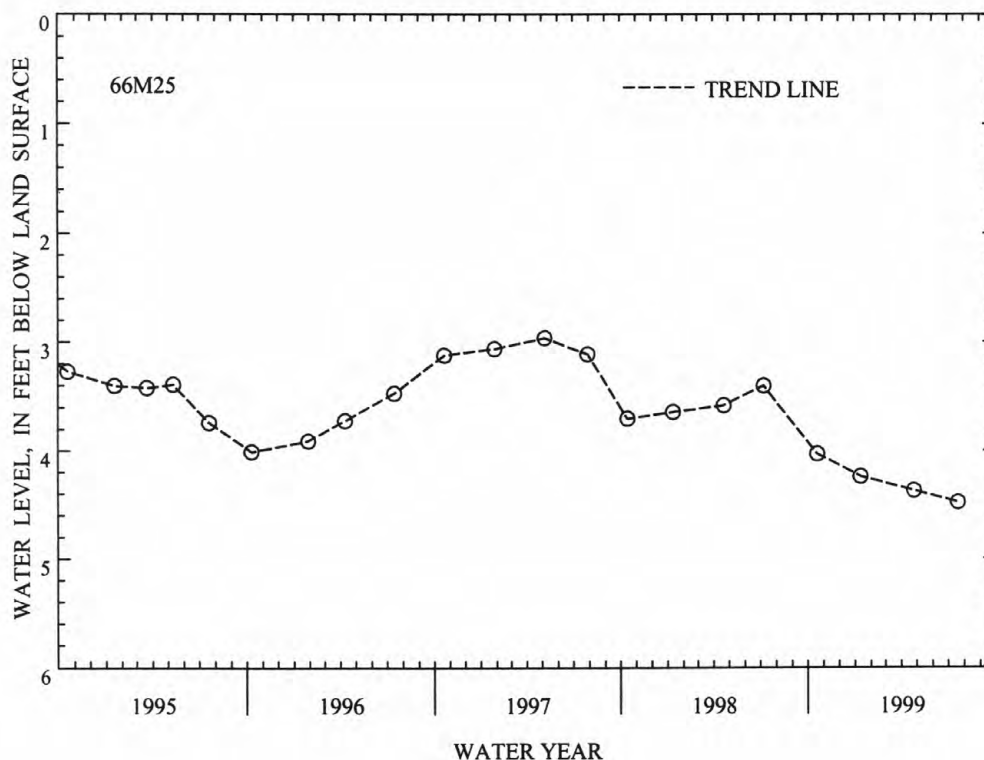
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

PERIOD OF RECORD.--October 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.10 ft below land-surface datum, Apr. 28, 1993; lowest measured, 4.48 ft below land-surface datum, July 20, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	4.03	JAN 12	4.24	APR 26	4.37	JUL 20	4.48
WATER YEAR 1999	HIGHEST	4.03	OCT 20, 1998				
	LOWEST	4.48	JUL 20, 1999				



GROUND-WATER LEVELS

ACCOMACK COUNTY

375610075361804. Local number, 66M 26 SOW 181D.

LOCATION.--Lat 37°56'10", long 75°36'18", Hydrologic Unit 02080109, 100 ft south of State Highway 703, 0.1 mi east of intersection of State Highways 701 and 703, and 2.7 mi northwest of Makemie Park. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 230 ft, screened 220 to 230 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 20, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 6 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum.

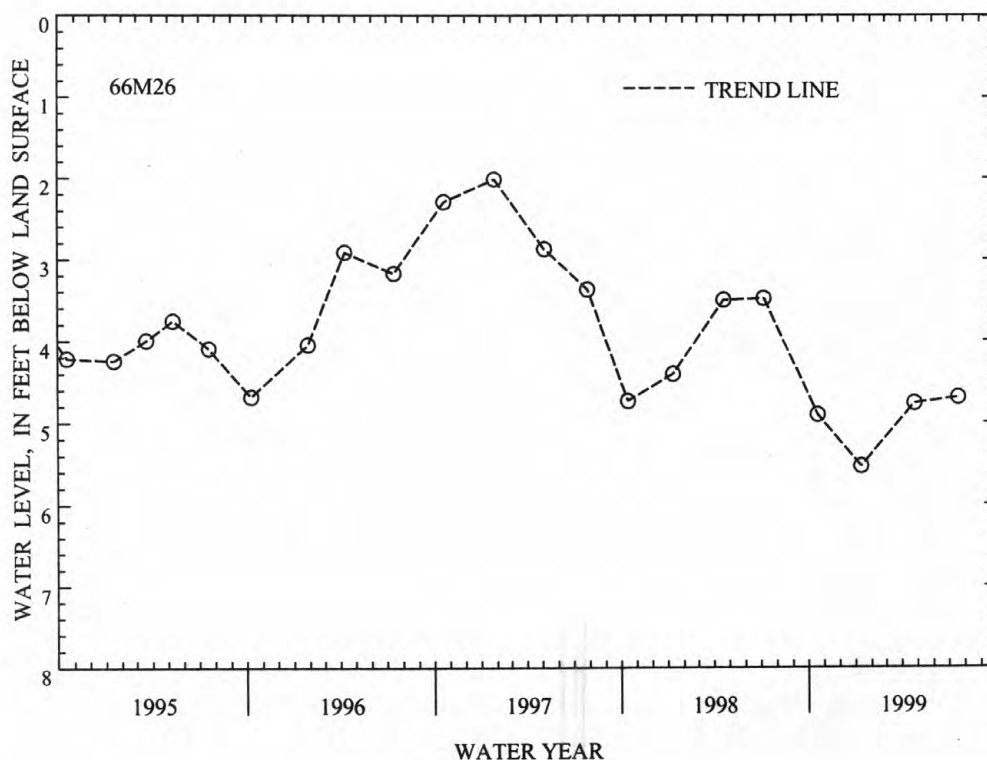
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

PERIOD OF RECORD.--October 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.93 ft below land-surface datum, Apr. 28, 1993; lowest measured, 5.53 ft below land-surface datum, Jan. 12, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	4.90	JAN 12	5.53	APR 26	4.76	JUL 20	4.69
WATER YEAR 1999		HIGHEST	4.69	JUL 20, 1999			
		LOWEST	5.53	JAN 12, 1999			



GROUND-WATER LEVELS

ACCOMACK COUNTY

375610075361805. Local number, 66M 27 SOW 181E.

LOCATION.--Lat 37°56'10", long 75°36'18", Hydrologic Unit 02080109, 100 ft south of State Highway 703, 0.1 mi east of intersection of State Highways 701 and 703, and 2.7 mi northwest of Makemie Park. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 30 ft, screened 20 to 30 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 20, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 6 ft above sea level, from topographic map. Measuring point: Top of casing, 0.9 ft above land-surface datum.

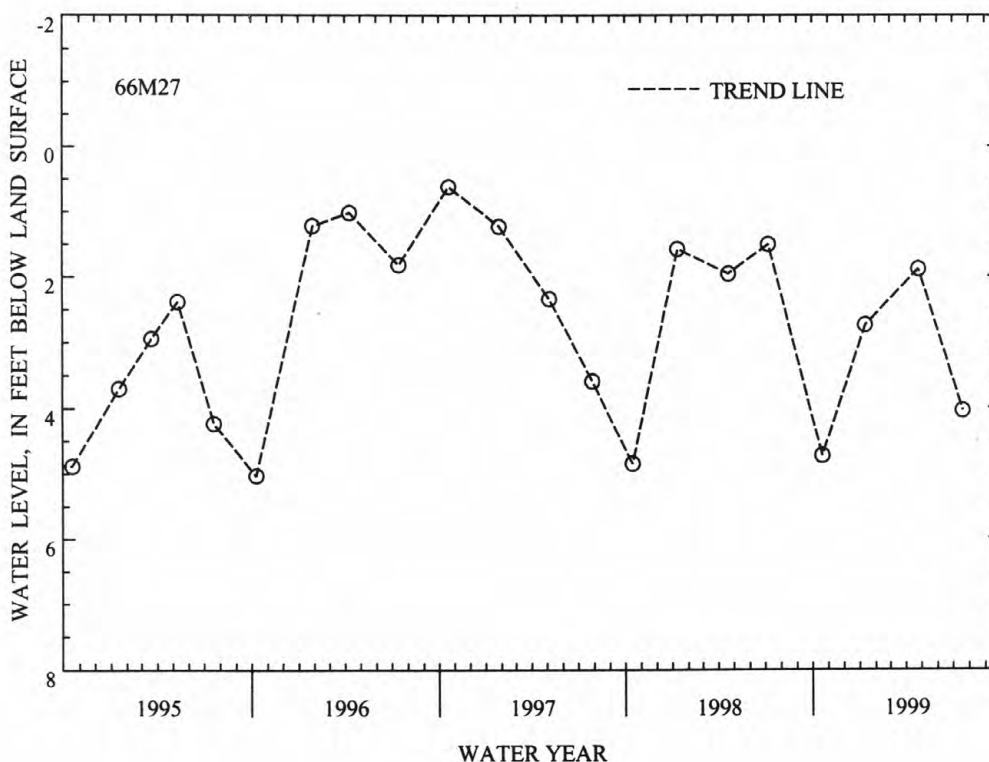
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--October 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.50 ft below land-surface datum, Aug. 8, 1989; lowest measured, 5.03 ft below land-surface datum, Oct. 10, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	4.73	JAN 12	2.74	APR 26	1.89	JUL 20	4.04
WATER YEAR 1999		HIGHEST	1.89	APR 26, 1999			
		LOWEST	4.73	OCT 20, 1998			



GROUND-WATER LEVELS

ACCOMACK COUNTY

375635075271501. Local number, 67M 10 SOW 115A.

LOCATION.--Lat 37°56'35", long 75°27'15", Hydrologic Unit 02060010, 200 ft east of State Highway 175, 2.4 mi east of Wattsville, and 2.5 mi northeast of intersection of State Highways 175 and 798. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 52 ft, screened 32 to 52 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 20, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 13 ft above sea level, from topographic map. Measuring point: Top of casing, 0.7 ft above land-surface datum prior to Feb. 28, 1988; 1.7 ft thereafter.

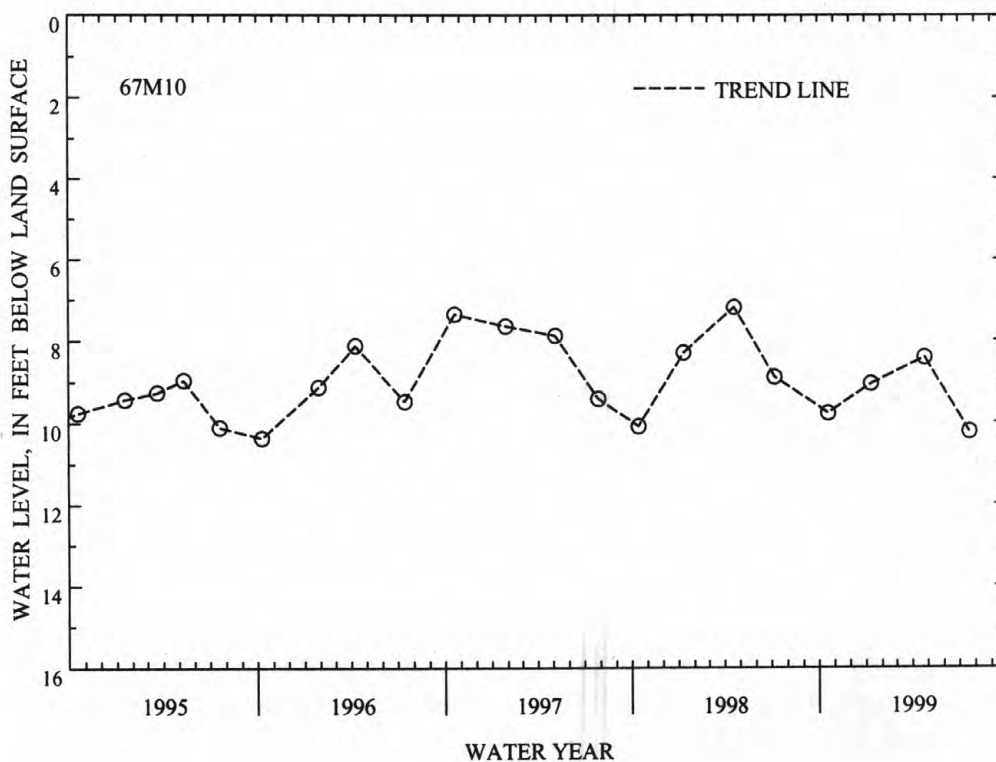
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division

PERIOD OF RECORD.--March 1981 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.72 ft below land-surface datum, Oct. 3, 1989; lowest measured, 10.36 ft below land-surface datum, Oct. 10, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	9.77	JAN 12	9.05	APR 26	8.41	JUL 21	10.22
WATER YEAR 1999	HIGHEST	8.41	APR 26, 1999				
	LOWEST	10.22	JUL 21, 1999				



GROUND-WATER LEVELS

ACCOMACK COUNTY

375635075271502. Local number, 67M 11 SOW 115B.

LOCATION.--Lat 37°56'35", long 75°27'15", Hydrologic Unit 02060010, 200 ft east of State Highway 175, 2.4 mi east of Wattsville, and 2.5 mi northeast of intersection of State Highways 175 and 798. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 138 ft, screened 118 to 138 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 14 ft above sea level, from topographic map. Measuring point: Top of casing, 0.6 ft above land-surface datum prior to Feb. 29, 1988; 1.9 ft thereafter.

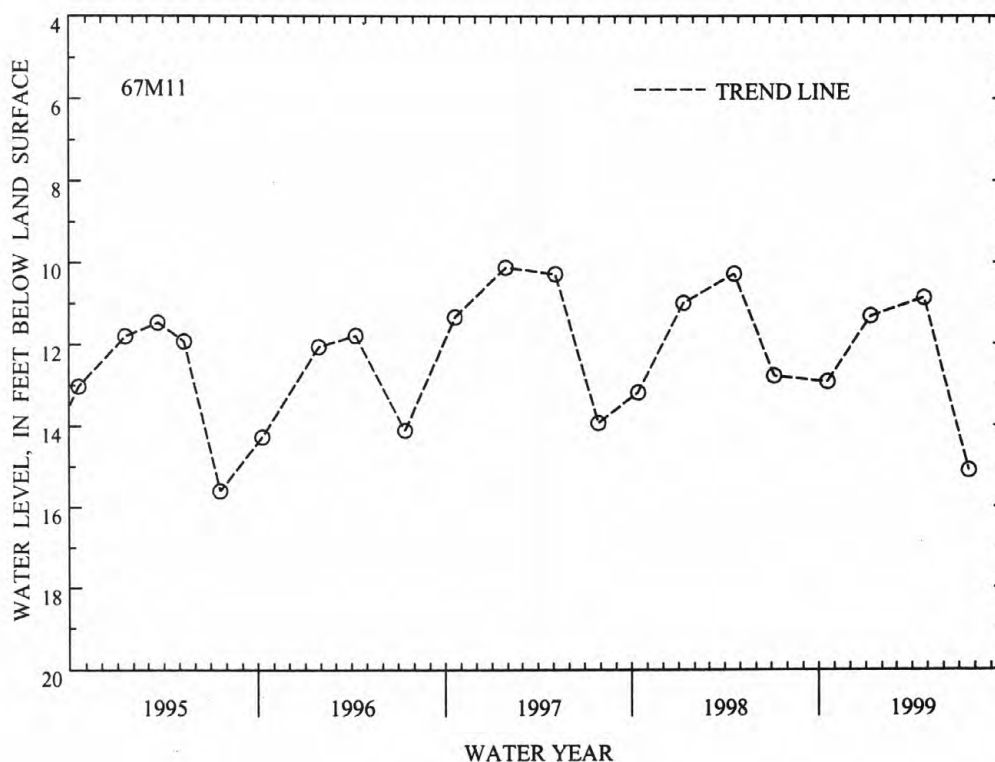
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage.

PERIOD OF RECORD.--March 1981 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.70 ft below land-surface datum, May 6, 1982; lowest measured, 15.60 ft below land-surface datum, July 20, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	12.91	JAN 12	11.31	APR 26	10.86	JUL 21	15.10
WATER YEAR 1999	HIGHEST	10.86	APR 26, 1999				
	LOWEST	15.10	JUL 21, 1999				



GROUND-WATER LEVELS

ACCOMACK COUNTY

375635075271504. Local number, 67M 13 SOW 115D.

LOCATION.--Lat 37°56'35", long 75°27'15", Hydrologic Unit 02060010, 50 ft east of State Highway 175, 2.4 mi east of Wattsville, and 2.6 mi northeast of intersection of State Highways 175 and 798. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 249 ft, screened 229 to 249 ft.

INSTRUMENTATION.--Continuous strip-chart recorder. Prior to Oct. 5, 1985, occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 16 ft above sea level, from topographic map. Measuring point: Top of casing, 1.8 ft above land-surface datum prior to Aug. 8, 1989; 1.5 ft thereafter.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water levels affected by local pumpage. Missing record due to recorder malfunction.

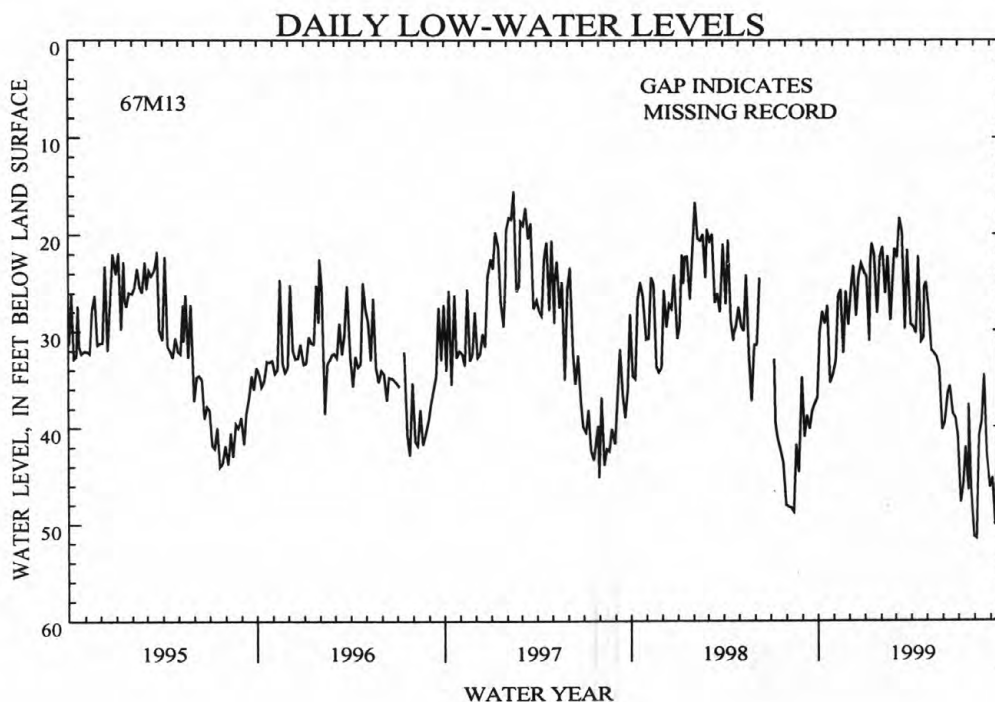
PERIOD OF RECORD.--March 1981 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 13.45 ft below land-surface datum, Apr. 2, 1990;
lowest recorded, 52.52 ft below land-surface datum, Aug. 17, 1987.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	30.15	33.05	25.65	24.25	21.30	22.40	29.55	27.80	39.45	47.80	51.58	45.25
10	27.99	26.35	23.25	31.05	26.10	18.30	30.25	31.95	36.50	45.85	40.90	50.22
15	29.25	25.70	28.45	20.90	22.25	19.70	22.25	32.25	35.70	42.10	39.50	40.39
20	27.35	32.30	24.40	22.10	28.95	29.85	31.10	32.65	38.60	46.60	34.55	29.00
25	35.40	25.90	23.00	28.18	24.60	21.60	30.70	33.75	39.00	46.35	42.69	41.60
EOM	34.35	29.40	23.95	22.25	21.50	29.30	24.90	40.30	40.85	51.38	46.30	37.05

WATER YEAR 1999	HIGHEST INSTANTANEOUS	16.60	FEB 24, 1999
	LOWEST INSTANTANEOUS	51.58	AUG 05, 1999



GROUND-WATER LEVELS

ALBEMARLE COUNTY

380333078264801. Local number, 43N 1 SOW 028.

LOCATION.--Lat 38°03'33", long 78°26'48", Hydrologic Unit 02080204, at Key West Subdivision, 1.1 mi east of Charlottesville. Owner: Key West Development Corporation.

AQUIFER.--Lynchburg Formation of Precambrian age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in., depth 409 ft, cased to 52 ft, open hole 52 to 409 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Apr. 10, 1981 to Oct. 19, 1995 continuous strip-chart recorder. June 25, 1974 to Apr. 10, 1981 occasional measurement with chalked tape; Prior to June 25, 1974, continuous strip-chart recorder.

DATUM.--Elevation of land-surface datum is 345 ft above sea level, from topographic map. Measuring point: Top of casing, 0.2 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

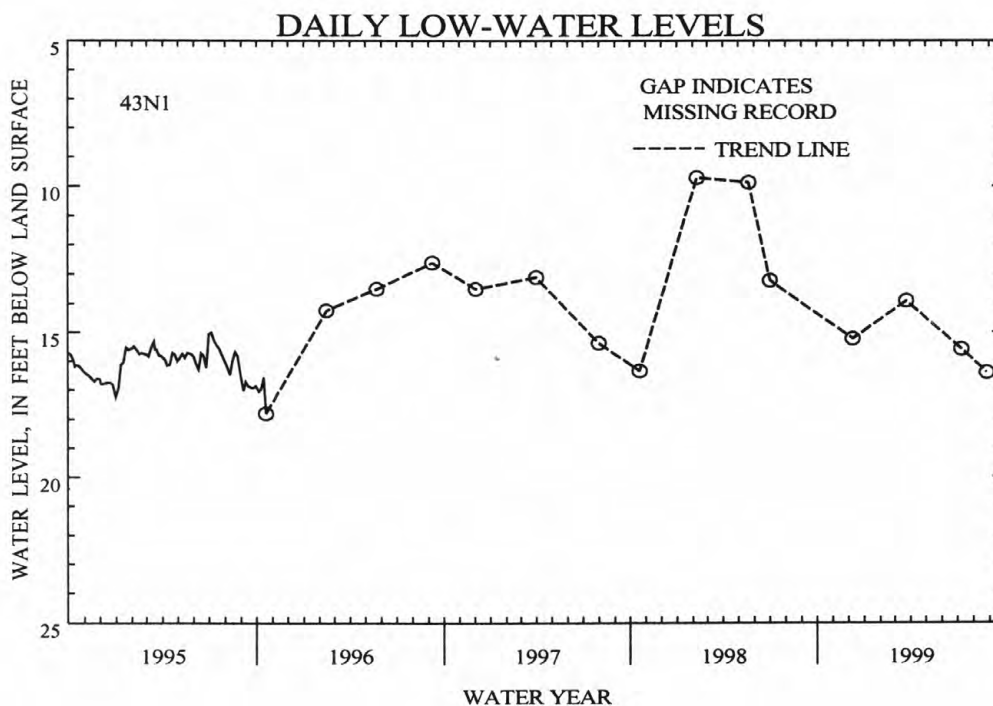
PERIOD OF RECORD.--February 1967 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 8.65 ft below land-surface datum, May 3, 1984; lowest recorded, 22.10 ft below land-surface datum, Nov. 30, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 10	15.22	MAR 24	13.91	JUL 09	15.58	AUG 27	16.39

WATER YEAR 1999	HIGHEST	13.91	MAR 24, 1999
	LOWEST	16.39	AUG 27, 1999



GROUND-WATER LEVELS

APPOMATTOX COUNTY

372133078493701. Local number, 40G 1 SOW 012.

LOCATION.--Lat 37°21'33", long 78°49'37", Hydrologic Unit 02080207, 0.45 mi east of State Highway 131, 300 ft north of U.S. Highway 460 in the town of Appomattox. Owner: Town of Appomattox.

AQUIFER.--Fork Mountain Formation of Cambrian age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 8 in., depth 288 ft, cased to 40 ft, open hole 40 to 288 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 15, 1967 to Dec. 1, 1995, continuous strip-chart recorder. Prior to Oct. 15, 1967, one measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 860 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum.

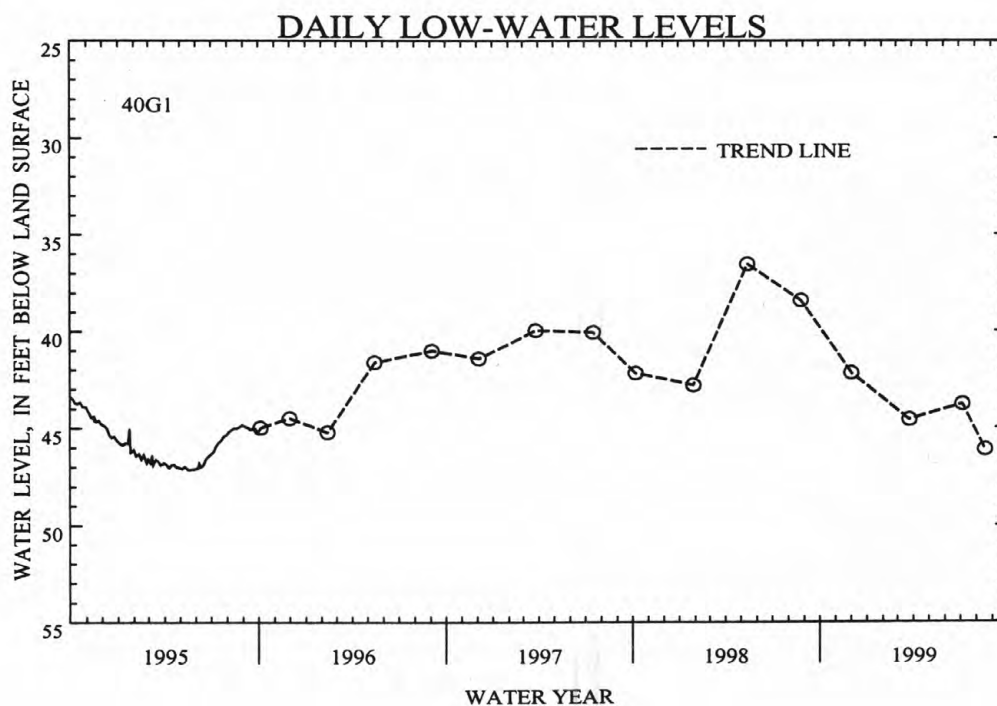
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--May 1949, October 1967 to current year. Unpublished record available May 1949 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 34.78 ft below land-surface datum, June 13, 1973; lowest recorded, 58.21 ft below land-surface datum, Nov. 17, 18, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 03	42.14	MAR 25	44.57	JUL 06	43.78	AUG 19	46.11
WATER YEAR 1999	HIGHEST	42.14	DEC 03, 1998				
	LOWEST	46.11	AUG 19, 1999				



GROUND-WATER LEVELS

APPOMATTOX COUNTY

372514078394301. Local number, 41H 2.

LOCATION.--Lat 37°25'14", long 78°39'43", Hydrologic Unit 02080207, 1.0 mi south of intersection of State Highway 636 on the east side of State Highway 640, 2.8 mi southeast of Sliders. Owner: U.S. Geological Survey.

AQUIFER.--Metagraywacke, quartzose schist, and melange of Cambrian age.

WELL CHARACTERISTICS.--Augered observation water well, diameter 3 in. to 68 ft, diameter 1.25 in. from 68 to 73 ft, depth 73 ft, screened 68 to 73 ft.

INSTRUMENTATION.--Bimonthly measurement with chalked tape by USGS personnel. August 1970 to October 1974, digital recorder--60-minute punch. Prior to August 1970, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 640 ft above sea level, from topographic map. Measuring point: Top of casing, 1.5 ft above land-surface datum.

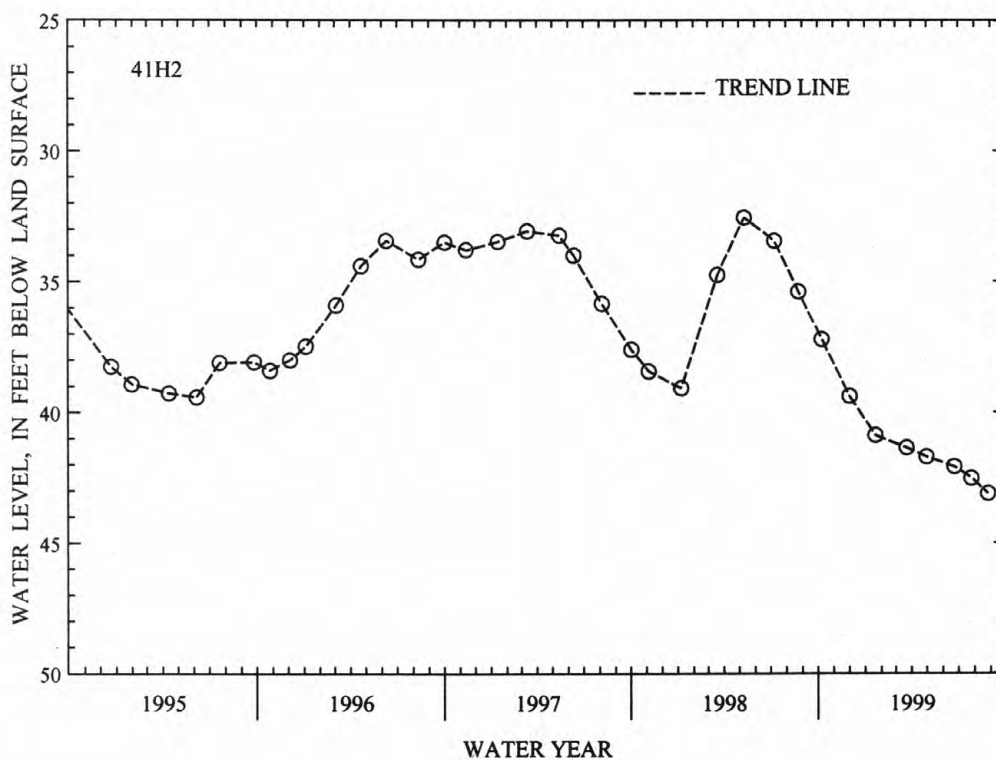
PERIOD OF RECORD.--March 1970 to current year. Unpublished records available prior to October 1977 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 32.56 ft below land-surface datum, May 11, 1998; lowest measured, 49.41 ft below land-surface datum, Mar. 30, 1971.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 09	37.21	JAN 21	40.87	APR 30	41.70	JUL 26	42.52
DEC 02	39.38	MAR 22	41.35	JUN 23	42.08	AUG 27	43.11

WATER YEAR 1999	HIGHEST	37.21	OCT 09, 1998
	LOWEST	43.11	AUG 27, 1999



GROUND-WATER LEVELS

ARLINGTON COUNTY

385346077073701. Local number, 53V 1.

LOCATION.--Lat 38°53'46", long 77°07'37", Hydrologic Unit 02070010, at Langston School, 4854 Lee Highway in Arlington. Owner: Arlington County School Board.

AQUIFER.--Brandywine Formation of Pleistocene age and Bryn Mawr (?) Gravel of Pliocene (?) age, overlying the Sykesville Formation of Precambrian age.

WELL CHARACTERISTICS.--Dug unused water well, diameter 24 in., depth 35 ft, terracotta casing.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Oct. 1, 1989 to Oct. 26, 1995, monthly measurement with chalked tape. Prior to Oct. 1, 1989, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 410 ft above sea level, from topographic map. Measuring point: Inner flange of manhole, at land-surface datum.

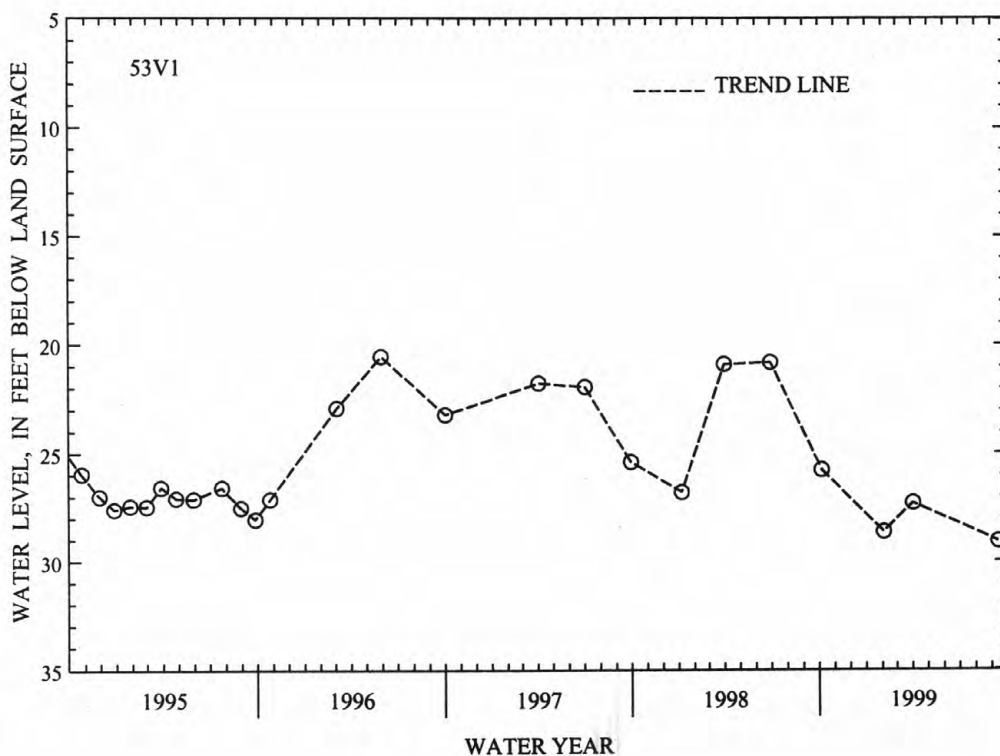
REMARKS.--Water levels affected by water running into well from broken water main October 1992 to August 1993.

PERIOD OF RECORD.--October 1931 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 14.19 ft (result of broken water main) below land-surface datum, June 28, 1993; lowest measured, 34.81 ft below land-surface datum, Dec. 5, 1931.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 07	25.77	FEB 04	28.65	APR 02	27.31	JUN 29	27.81	SEP 14	29.09
WATER YEAR 1999		HIGHEST	25.77	OCT 07, 1998					
		LOWEST	29.09	SEP 14, 1999					



GROUND-WATER LEVELS

ARLINGTON COUNTY

385253077042301. Local number, 54V 3.

LOCATION.--Lat 38°52'53", long 77°04'23", Hydrologic Unit 02070010, at Arlington National Cemetery in Arlington.
Owner: National Park Service, National Capitol Parks.

AQUIFER.--Terrace gravels of Holocene age and sand of Early Cretaceous age.

WELL CHARACTERISTICS.--Dug unused water well, diameter 48 in., depth 50 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Oct. 1, 1989 to Oct. 26, 1995, monthly measurement with chalked tape. Prior to Oct. 1, 1989, bimonthly measurement with chalked tape.

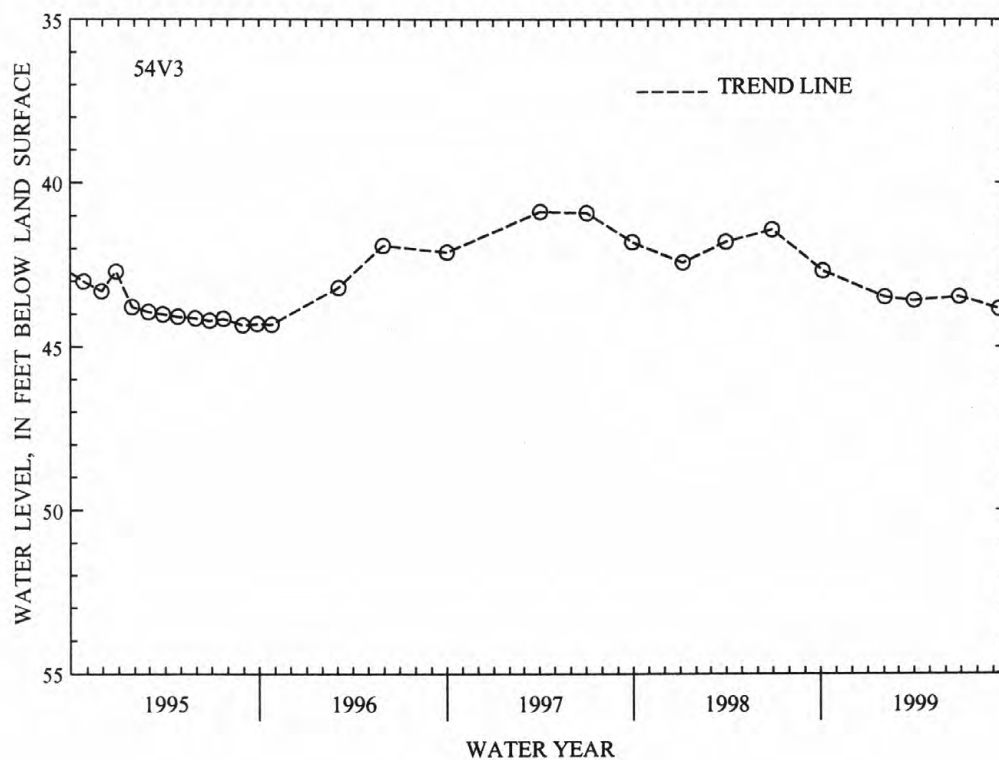
DATUM.--Elevation of land-surface datum is 205 ft above sea level, from topographic map. Measuring point: Top of brick and stone casing, 3.0 ft above land-surface datum.

PERIOD OF RECORD.--January 1958 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 40.34 ft below land-surface datum, June 26, 1978; lowest measured, 45.28 ft below land-surface datum, Nov. 28, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 07	42.67	FEB 04	43.47	APR 02	43.58	JUN 29	43.46	SEP 14	43.83
WATER YEAR 1999	HIGHEST	42.67	OCT 07, 1998						
	LOWEST	43.83	SEP 14, 1999						



GROUND-WATER LEVELS

AUGUSTA COUNTY

382523078535501. Local number, 38P 1 SOW 070.

LOCATION.--Lat 38°07'48", long 79°04'07", Hydrologic Unit 02070005, 100 ft east of State Highway 613, 0.5 mi south of intersection of State Highway 613 and U.S. Highway 11, and 0.9 mi south of Dogwood Hill. Owner: Augusta County Water Authority.

AQUIFER.--Beekmantown Group of Early Ordovician age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 8 in. to 30 ft, diameter 6 in. from 30 to 97 ft, depth 250 ft, open hole from 97 to 250 ft.

INSTRUMENTATION.--Continuous strip-chart recorder. Prior to Jan. 10, 1974, occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 1,490 ft above sea level, from topographic map. Measuring point: Top of casing, 1.5 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Missing record due to recorder malfunction.

PERIOD OF RECORD.--December 1973 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

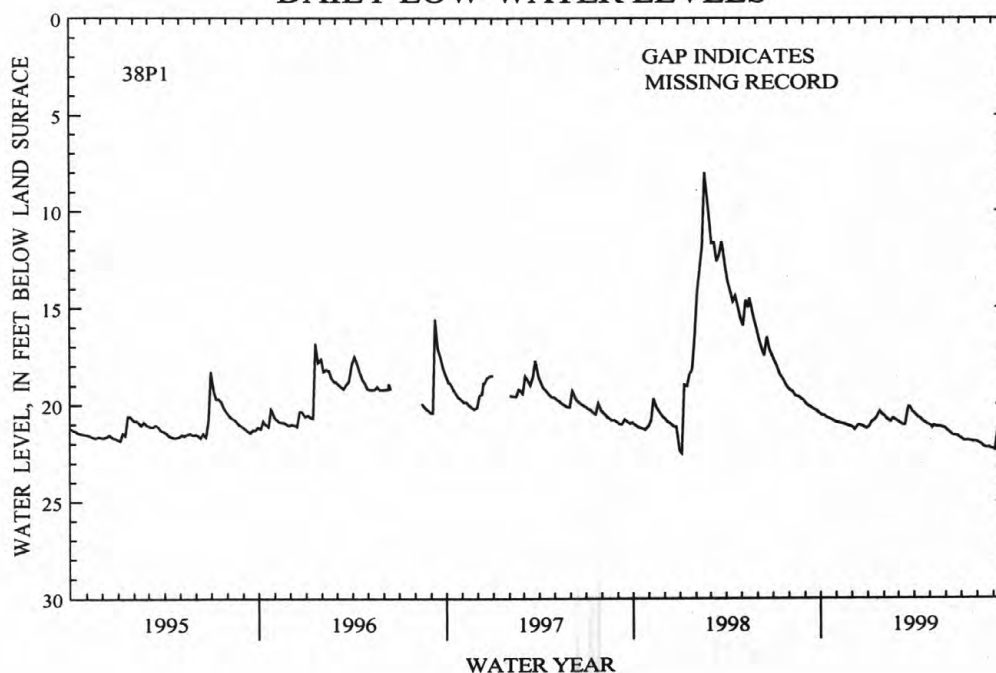
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 8.02 ft below land-surface datum, Feb. 20, 1998; lowest recorded, 27.02 ft below land-surface datum, Oct. 16, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	20.54	20.92	21.20	21.12	20.62	20.95	20.52	21.11	21.33	21.82	21.97	22.34
10	20.54	20.96	21.20	20.88	20.78	21.02	20.66	21.08	21.46	21.87	22.05	21.37
15	20.66	20.98	21.05	20.77	20.88	21.04	20.75	21.12	21.56	21.85	22.17	21.44
20	20.73	21.03	21.08	20.63	20.70	20.29	20.88	21.13	21.59	21.88	22.22	21.39
25	20.80	21.08	21.15	20.35	20.80	20.12	20.97	21.16	21.62	21.90	22.21	21.17
EOM	20.89	21.13	21.22	20.53	20.84	20.38	21.05	21.22	21.72	21.90	22.28	20.79

WATER YEAR 1999	HIGHEST INSTANTANEOUS	20.12	MAR 22, 1999
	LOWEST INSTANTANEOUS	22.34	SEP 03, 04, 05, 1999

DAILY LOW-WATER LEVELS



GROUND-WATER LEVELS

BUCHANAN COUNTY

370443082022301. Local number, 14E 40.

LOCATION.--Lat 37°04'43", long 82°02'23", Hydrologic Unit 05070202, 50 ft south of the intersection of State Highways 620 and 622, at Grissom School. Owner: U.S. Geological Survey.

AQUIFER.--Jawbone coal bed of Norton Formation of Pennsylvanian age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in., depth 60 ft, cased to 14 ft, open hole 14 to 60 ft.

INSTRUMENTATION.--Data logger--15-minute record interval. June 1988 to September 1997, digital recorder--60-minute punch. October 1986 to June 1988, occasional measurement with chalked tape by USGS personnel. August 1982 to September 1983, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 1,820 ft above sea level, from topographic map. Measuring point: Top of casing, 0.8 ft above land-surface datum prior to May 30, 1995; 6.74 thereafter.

REMARKS.--Missing record due to recorder malfunction.

PERIOD OF RECORD.--August 1982 to September 1983, October 1986 to current year. Unpublished records available prior to October 1986 in files of the Geological Survey.

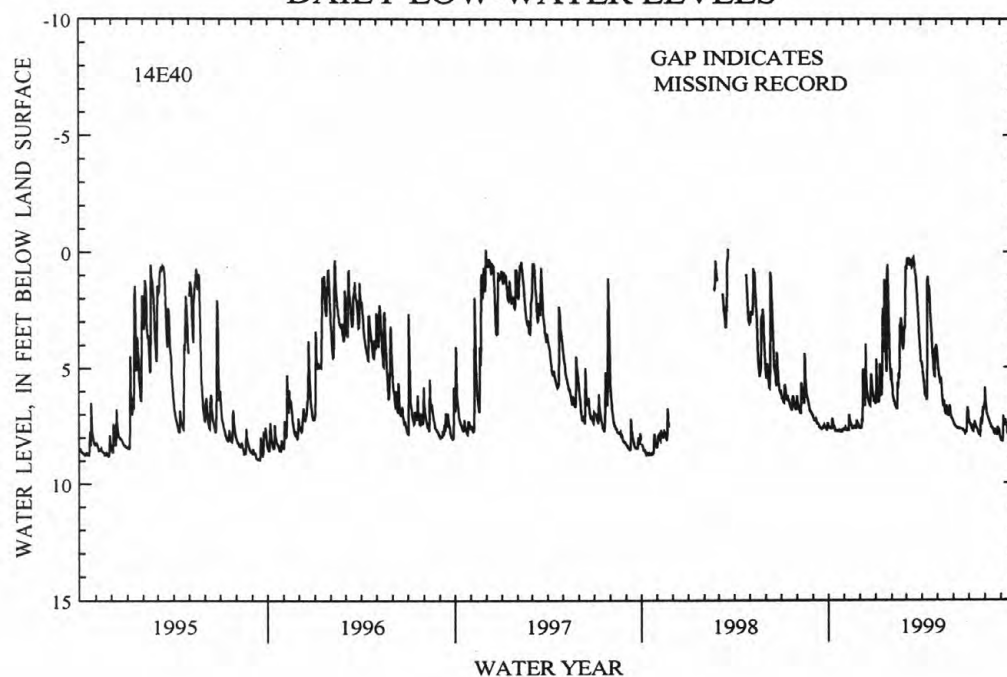
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.25 ft above land-surface datum, Apr. 17, 1998; lowest recorded, 11.49 ft below land-surface datum, Oct. 6, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	7.60	7.64	7.61	6.10	6.31	.32	5.62	5.43	7.53	7.52	6.95	8.21
10	7.33	7.71	6.26	4.85	6.62	.34	6.37	6.12	7.63	7.77	7.34	7.26
15	7.74	7.49	5.94	2.85	5.25	.30	1.47	6.73	7.65	7.53	7.60	7.88
20	7.74	7.61	6.53	2.91	2.87	.91	3.38	6.90	7.69	7.86	7.85	8.17
25	7.71	7.60	5.72	.55	4.07	2.59	5.34	6.64	7.78	7.19	7.88	8.27
EOM	7.67	7.56	6.47	5.57	3.08	4.76	4.18	7.25	6.80	6.64	8.02	6.97

WATER YEAR 1999	HIGHEST RECORDED	0.03	MAR 03, 1999
	LOWEST RECORDED	8.34	SEP 27, 1999

DAILY LOW-WATER LEVELS



GROUND-WATER LEVELS

BUCKINGHAM COUNTY

372608078404601. Local number, 41H 3.

LOCATION.--Lat 37°26'08", long 78°40'46", Hydrologic Unit 02080207, 0.85 mi west of Ranger Headquarters on south side of dirt road off State Highway 636, 1.5 mi south of Sliders. Owner: U.S. Geological Survey.

AQUIFER.--Metagraywacke, quartzose schist, and melange of Cambrian age.

WELL CHARACTERISTICS.--Augured observation water well, diameter 3 in. to 49 ft, diameter 1.25 in. from 49 to 54 ft, depth 54 ft, screened 49 to 54 ft.

INSTRUMENTATION.--Electronic pressure transducer data-logger--60-minute record interval. Prior to June 12, 1998, occasional measurement with chalked tape by USGS personnel. August 1970 to October 1974, digital recorder--60-minute punch. Prior to August 1970, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 683.8 ft above sea level. Measuring point: Top of casing, 1.3 ft above land-surface datum.

REMARKS.--Prior to Oct. 1, 1981, well was reported as being located in Appomattox County.

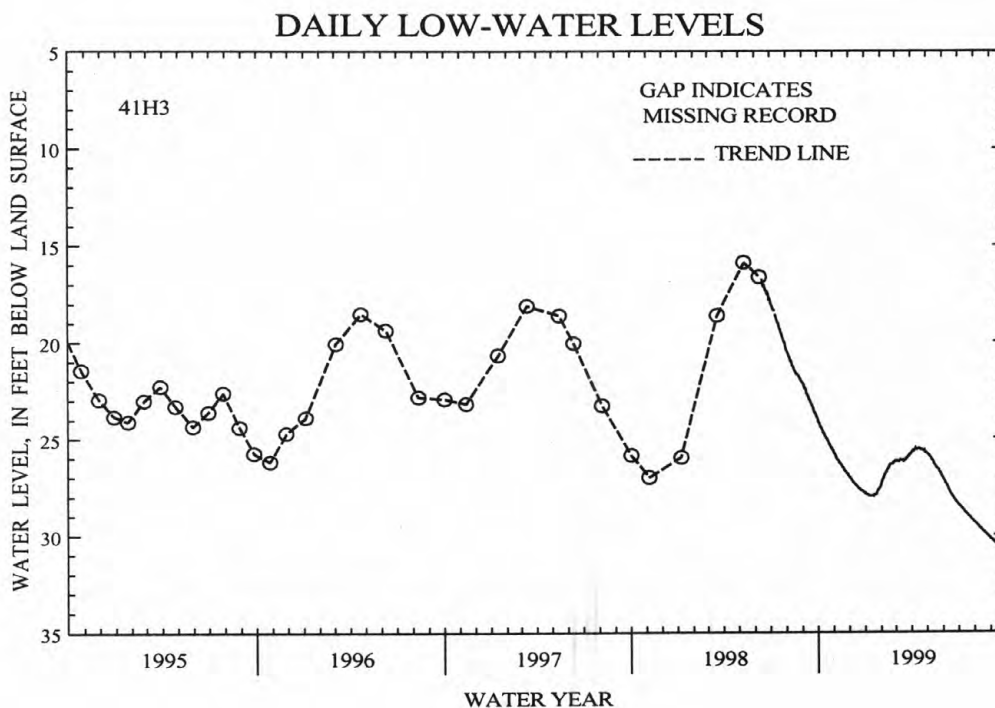
PERIOD OF RECORD.--March 1970 to current year. Unpublished records available prior to October 1977 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 7.31 ft below land-surface datum, Apr. 12, 1973;
lowest measured, 30.62 ft below land-surface datum, Sept. 23, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	24.35	25.93	27.11	27.91	27.11	26.23	25.68	25.90	27.28	28.55	29.45	30.29
10	24.60	26.16	27.30	27.97	26.78	26.13	25.60	26.11	27.56	28.70	29.59	30.43
15	24.90	26.36	27.45	27.98	26.54	26.20	25.53	26.34	27.82	28.85	29.73	30.53
20	25.12	26.56	27.60	27.93	26.36	26.14	25.59	26.54	28.02	29.00	29.86	30.60
25	25.38	26.75	27.71	27.70	26.28	25.95	25.68	26.72	28.23	29.14	30.00	30.60
EOM	25.69	26.94	27.82	27.47	26.18	25.79	25.78	27.00	28.39	29.31	30.16	30.37

WATER YEAR 1999	HIGHEST INSTANTANEOUS	23.96	OCT 01, 1998
	LOWEST INSTANTANEOUS	30.62	SEP 23, 1999



GROUND-WATER LEVELS

CAROLINE COUNTY

380624077172801. Local number, 52N 5.

LOCATION.--Lat 38°06'24", long 77°17'28", Hydrologic Unit 02080104, in block pumphouse under water tank at Camp Wilcox at Fort A. P. Hill, 1.1 mi north of U.S. Highway 301, and near Bowling Green. Owner: U.S. Department of the Army.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in. to unknown depth, diameter 4 in. from unknown depth to 524 ft, depth 524 ft, screened 468 to 501 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 210 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.

REMARKS.--Water level affected by regional drawdown.

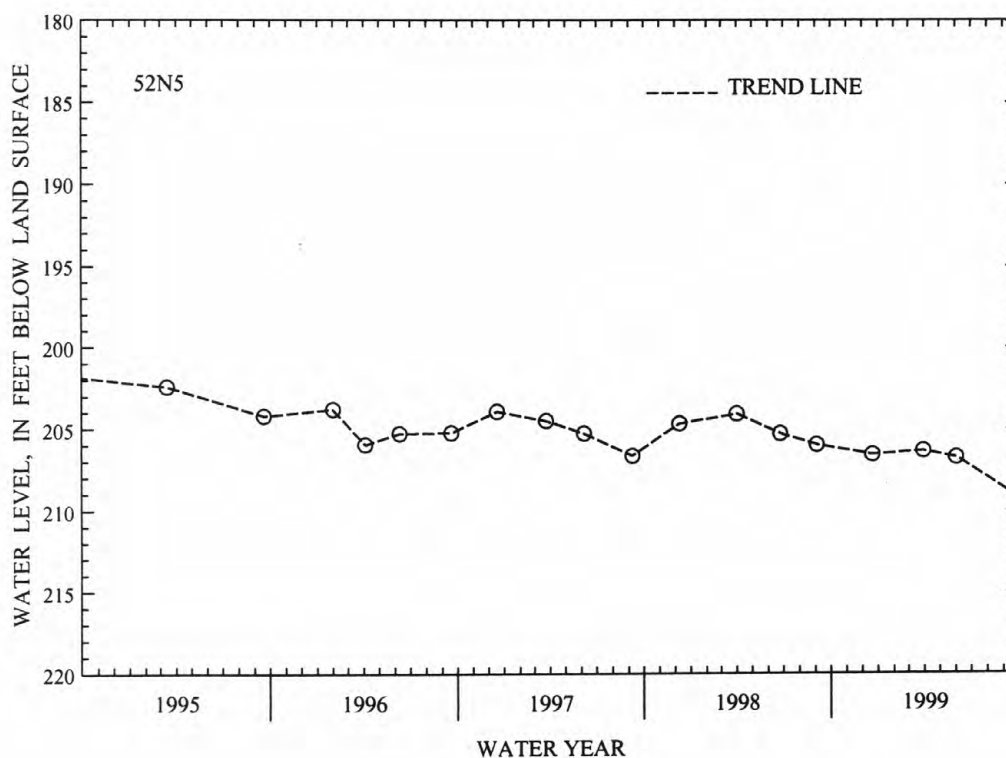
PERIOD OF RECORD.--December 1971 to current year. Unpublished records available prior to October 1988 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 172.20 ft below land-surface datum, Dec. 16, 1971; lowest measured, 209.15 ft below land-surface datum, Sept. 28, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 21	206.54	MAR 30	206.31	JUN 02	206.72	SEP 28	209.15

WATER YEAR 1999	HIGHEST	206.31	MAR 30, 1999
	LOWEST	209.15	SEP 28, 1999



GROUND-WATER LEVELS

CAROLINE COUNTY

380415077194101. Local number, 52N 6.

LOCATION.--Lat 38°04'15", long 77°19'41", Hydrologic Unit 02080105, on the southwest corner of the intersection of Burke Street and Second Street in the headquarters area of Fort A. P. Hill near Bowling Green. Owner: U.S. Department of the Army.

AQUIFER.--Lower Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in. to 480 ft, diameter 3 in. from 446 to 500 ft, depth 500 ft, screened 488 to 498 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 214 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.

REMARKS.--Water level affected by regional drawdown.

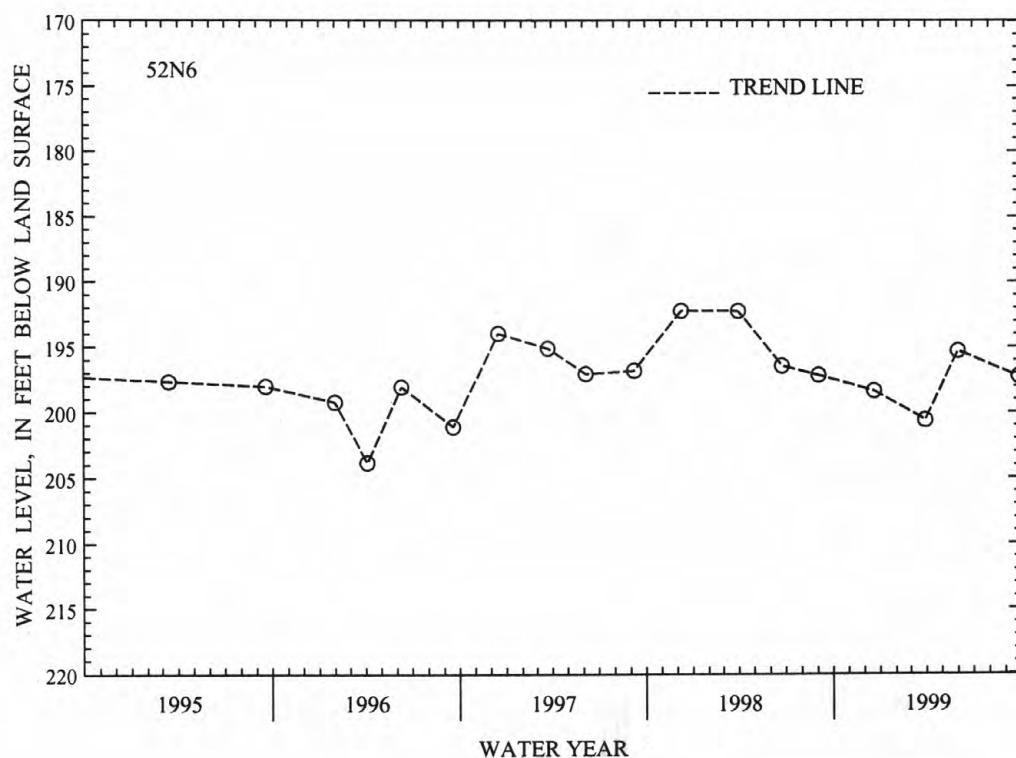
PERIOD OF RECORD.--December 1971 to current year. Unpublished records available prior to October 1988 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 158.65 ft below land-surface datum, Feb. 10, 1982; lowest measured, 207.74 ft below land-surface datum, Mar. 19, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 21	198.35	MAR 30	200.59	JUN 02	195.29	SEP 28	197.22

WATER YEAR 1999	HIGHEST	195.29	JUN 02, 1999
	LOWEST	200.59	MAR 30, 1999



GROUND-WATER LEVELS

CAROLINE COUNTY

375922077142901. Local number, 53M 1.

LOCATION.--Lat 37°59'22", long 77°14'29", Hydrologic Unit 02080105, at Sparta Volunteer Fire Co., 200 ft south of State Highway 721 and 50 ft west of Maracossic Creek. Owner: U.S. Geological Survey.

AQUIFER.--Aquia aquifer of Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 2 in., depth 110.75 ft, screened 100.75 ft to 110.75 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to October 1998, monthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 89 ft above sea level. Measuring point: Top of casing, 0.75 ft above land-surface datum.

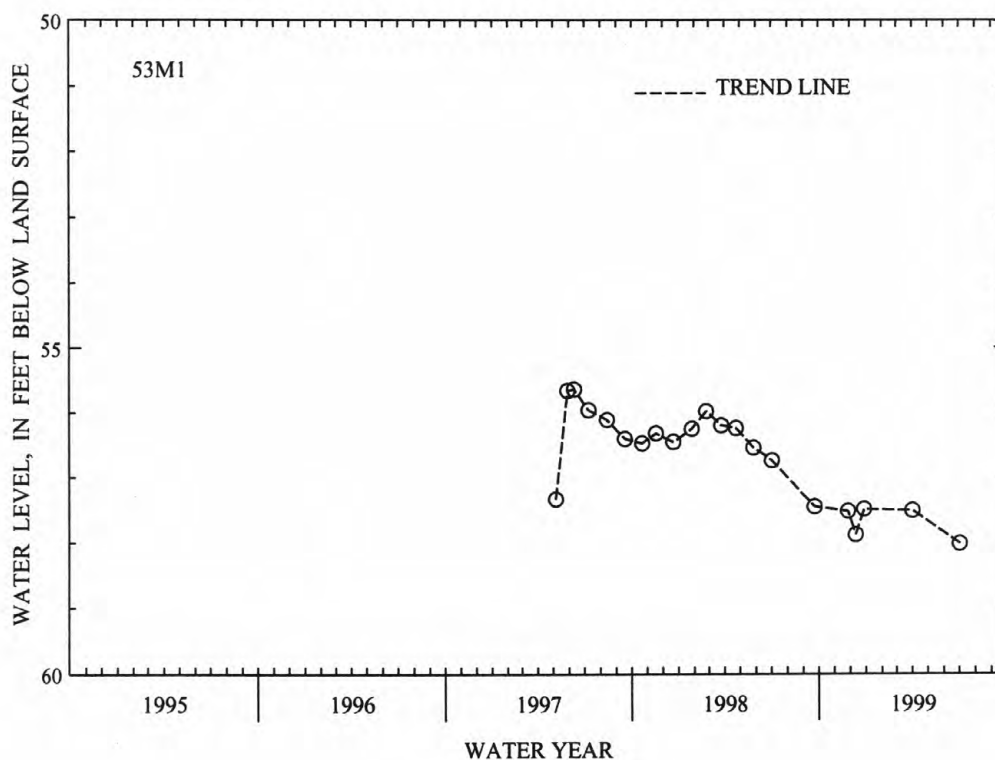
REMARKS.--Well drilled as part of Fall Zone ground-water study.

PERIOD OF RECORD.--May 1997 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 55.64 ft below land-surface datum, June 11, 1997; lowest measured, 58.02 ft below land-surface datum, July 2, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 27	57.52	DEC 12	57.88	DEC 28	57.49	APR 01	57.51	JUL 02	58.02
WATER YEAR 1999		HIGHEST	57.49	DEC 28, 1998					
		LOWEST	58.02	JUL 02, 1999					



GROUND-WATER LEVELS

CHARLES CITY COUNTY

371956076055101. Local number, 54G 13 SOW 067.

LOCATION.--Lat 37°19'56", long 77°05'51", Hydrologic Unit 02080206, 0.6 mi east of Bowens Store on State Highway 5, 1.6 mi southwest of Charles City. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 2 in., depth 227 ft, screened 222 to 227 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 30, 1985, to July 10, 1995, bimonthly measurement with chalked tape. Prior to Sept. 30, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 35 ft above sea level, from topographic map. Measuring point: Top of casing, 2.4 ft above land-surface datum.

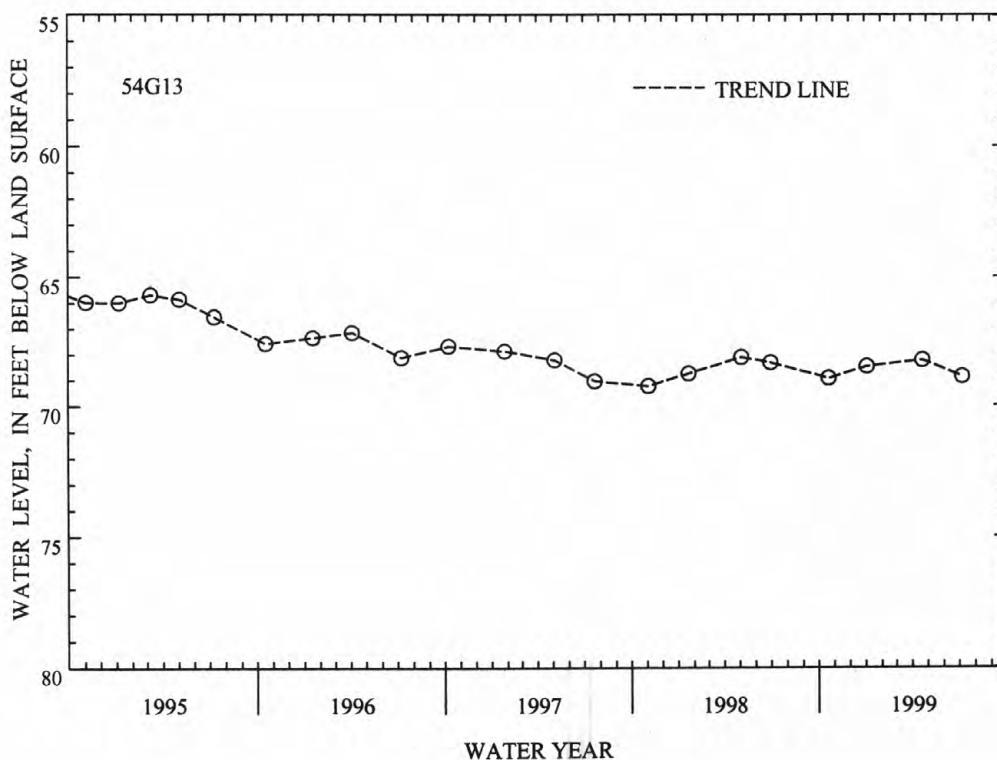
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

PERIOD OF RECORD.--June 1973 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 44.63 ft below land-surface datum, June 7, 1973; lowest measured, 69.23 ft below land-surface datum, Nov. 4, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	68.94	JAN 04	68.48	APR 22	68.23	JUL 08	68.87
WATER YEAR 1999		HIGHEST	68.23	APR 22, 1999			
		LOWEST	68.94	OCT 22, 1998			



GROUND-WATER LEVELS

CITY OF CHESAPEAKE

364852076252201. Local number, 59C 29 SOW 163A.

LOCATION.--Lat 36°48'52", long 76°25'22", Hydrologic Unit 02080208, 0.7 mi southeast of intersection of State Highways 191 and 337 in Chesapeake. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 35 ft, screened 25 to 35 ft.

INSTRUMENTATION.--Biweekly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Aug. 21, 1985 to Oct. 9, 1996, bimonthly measurement with chalked tape. Prior to Aug. 21, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, 0.9 ft above land-surface datum, prior to Mar. 11, 1996; 2.45 ft Mar. 12, 1996 to May 28, 1998; 3.74 ft thereafter.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

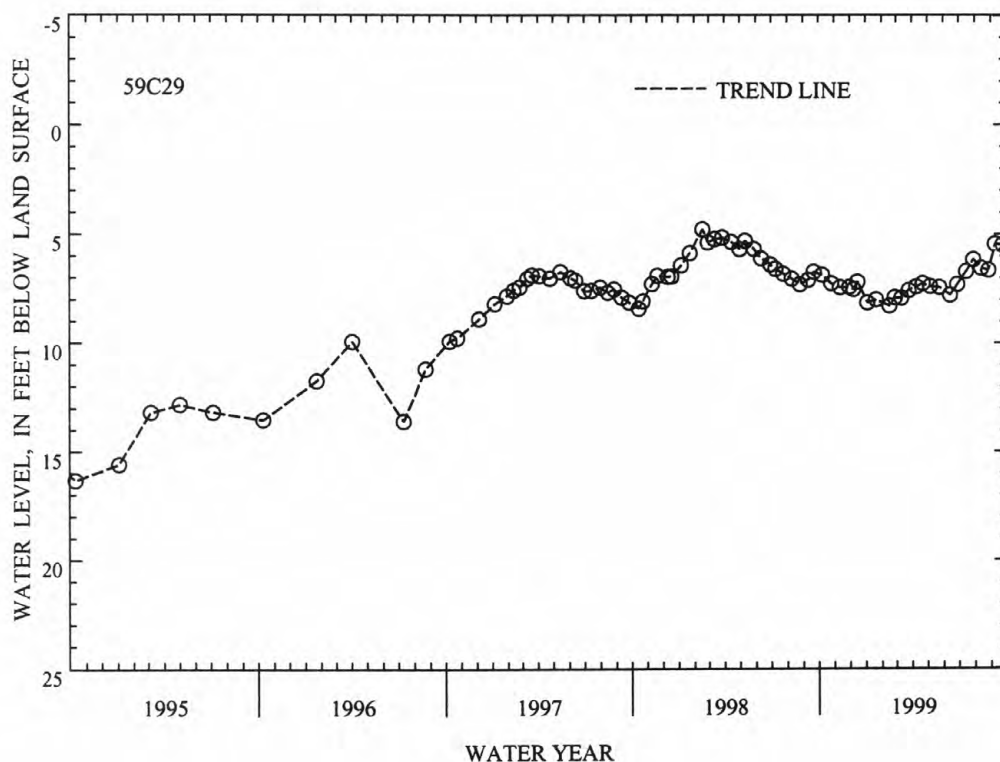
PERIOD OF RECORD.--November 1981 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.70 ft below land-surface datum, Mar. 14, 1989; lowest measured, 18.39 ft below land-surface datum, Nov. 5, 1991.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 08	6.86	DEC 08	7.53	FEB 16	8.28	APR 09	7.40	JUN 14	7.79	AUG 13	6.55
OCT 26	7.25	DEC 16	7.18	FEB 26	7.90	APR 22	7.25	JUN 28	7.30	AUG 27	6.64
NOV 12	7.44	JAN 04	8.14	MAR 11	7.93	MAY 06	7.39	JUL 15	6.70	SEP 09	5.44
NOV 30	7.42	JAN 21	8.00	MAR 25	7.57	MAY 24	7.43	JUL 29	6.15	SEP 24	5.48

WATER YEAR 1999 HIGHEST 5.44 SEP 09, 1999
 LOWEST 8.28 FEB 16, 1999



GROUND-WATER LEVELS

CITY OF CHESAPEAKE

364852076252202. Local number, 59C 30 SOW 163B.

LOCATION.--Lat 36°48'52", long 76°25'22", Hydrologic Unit 02080208, 0.7 mi southeast of intersection of State Highways 191 and 337 in Chesapeake. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 2 in., depth 948 ft, screened 938 to 948 ft.

INSTRUMENTATION.--Biweekly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Aug. 21, 1985 to Oct. 9, 1996, bimonthly measurement with chalked tape. Prior to Aug. 21, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, 0.8 ft above land-surface datum, prior to Mar. 11, 1996; 2.47 ft thereafter.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

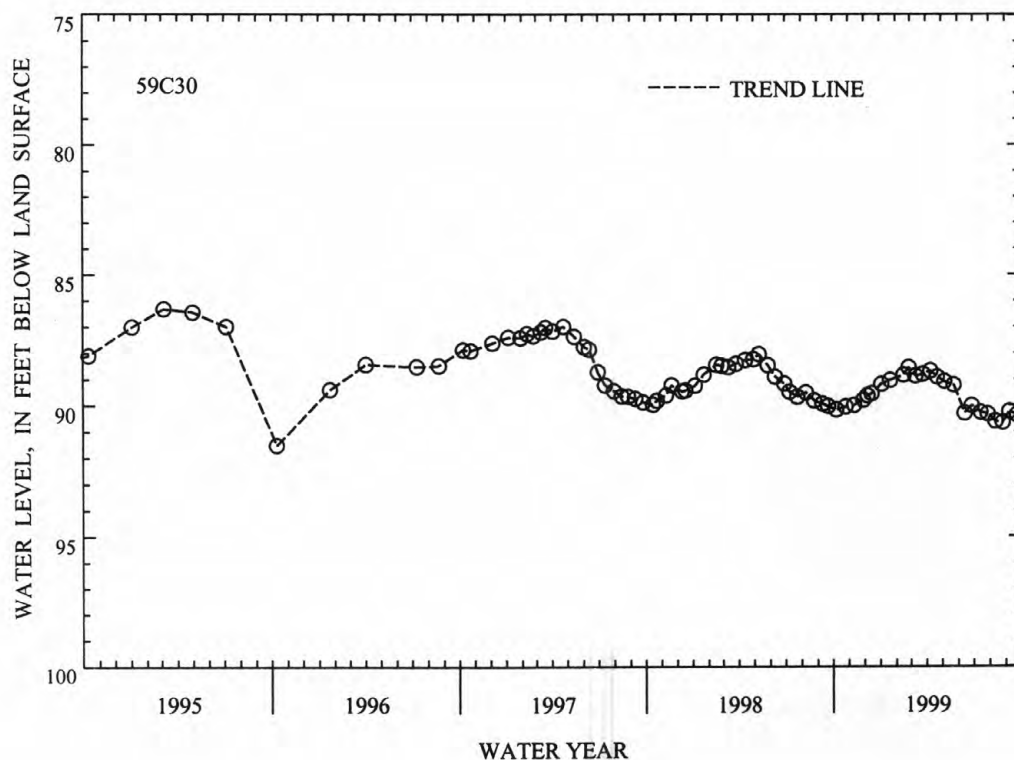
PERIOD OF RECORD.--November 1981 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 67.06 ft below land-surface datum, May 25, 1983; lowest measured, 91.51 ft below land-surface datum, Oct. 11, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 08	90.16	DEC 08	89.62	FEB 16	88.83	APR 09	88.68	JUN 14	90.29	AUG 13	90.60
OCT 26	90.05	DEC 16	89.54	FEB 26	88.55	APR 22	88.91	JUN 28	90.00	AUG 27	90.65
NOV 12	89.99	JAN 04	89.18	MAR 11	88.87	MAY 06	89.08	JUL 15	90.26	SEP 09	90.23
NOV 30	89.79	JAN 21	89.03	MAR 25	88.80	MAY 24	89.21	JUL 29	90.32	SEP 24	90.36

WATER YEAR 1999	HIGHEST	88.55	FEB 26, 1999
	LOWEST	90.65	AUG 27, 1999



GROUND-WATER LEVELS

CITY OF CHESAPEAKE

364852076252203. Local number, 59C 31 SOW 163C.

LOCATION.--Lat 36°48'52", long 76°25'22", Hydrologic Unit 02080208, 0.7 mi southeast of intersection of State Highways 191 and 337 in Chesapeake. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 2 in., depth 631 ft, screened 621 to 631 ft.

INSTRUMENTATION.--Biweekly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Aug. 21, 1985 to Oct. 9, 1996, bimonthly measurement with chalked tape. Prior to Aug. 21, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, 1.2 ft above land-surface datum, prior to Mar. 11, 1996; 2.88 ft thereafter.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

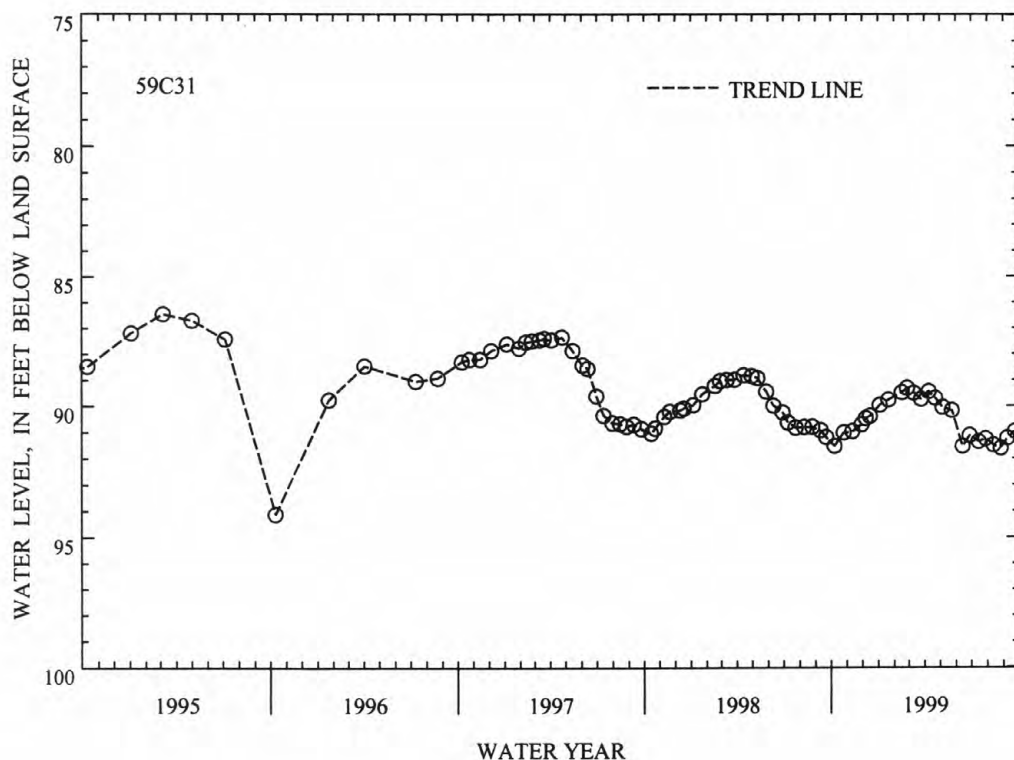
PERIOD OF RECORD.--November 1981 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 67.13 ft below land-surface datum, Feb. 23, 1983; lowest measured, 94.12 ft below land-surface datum, Oct. 11, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 08	91.52	DEC 08	90.47	FEB 16	89.48	APR 09	89.44	JUN 14	91.54	AUG 13	91.49
OCT 26	91.01	DEC 16	90.38	FEB 26	89.31	APR 22	89.70	JUN 28	91.12	AUG 27	91.61
NOV 12	90.96	JAN 04	89.96	MAR 11	89.50	MAY 06	90.05	JUL 15	91.36	SEP 09	91.22
NOV 30	90.70	JAN 21	89.76	MAR 25	89.74	MAY 24	90.17	JUL 29	91.25	SEP 24	90.97

WATER YEAR 1999	HIGHEST	89.31	FEB 26, 1999
	LOWEST	91.61	AUG 27, 1999



GROUND-WATER LEVELS

CITY OF CHESAPEAKE

363836076201701. Local number, 60B 3 SOW 090A.

LOCATION.--Lat 36°38'36", long 76°20'17", Hydrologic Unit 03010205, 0.15 mi north of intersection of Benefit and West Roads, 1.5 mi north of Cornland. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 855 ft, screened 824 to 834 ft.

INSTRUMENTATION.-- Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Aug. 25, 1985 to Oct. 12, 1995, continuous strip-chart recorder. Prior to Aug. 25, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 16 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum.

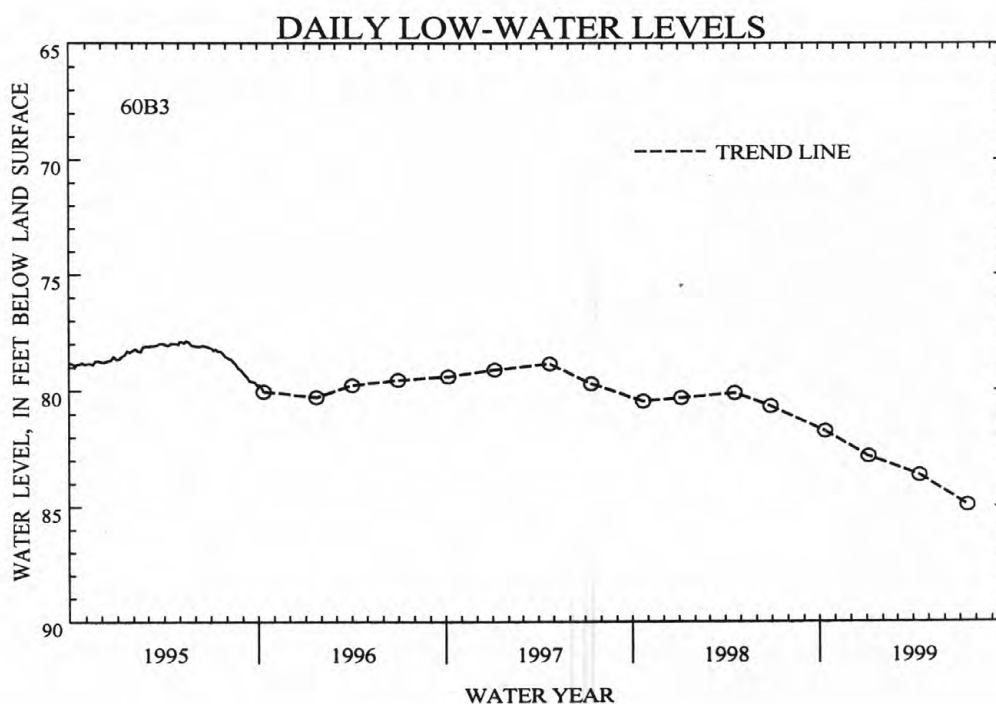
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

PERIOD OF RECORD.--July 1978 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 53.80 ft below land-surface datum, July 11, 1978; lowest recorded, 84.93 ft below land-surface datum, July 16, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 13	81.74	JAN 05	82.82	APR 14	83.63	JUL 16	84.93
WATER YEAR 1999	HIGHEST	81.74	OCT 13, 1998				
	LOWEST	84.93	JUL 16, 1999				



GROUND-WATER LEVELS

CITY OF CHESAPEAKE

363836076201702. Local number, 60B 4 SOW 090B.

LOCATION.--Lat 36°38'36", long 76°20'17", Hydrologic Unit 03010205, 0.15 mi north of intersection of Benefit and West Roads, 1.5 mi north of Cornland. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Virginia Beach aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 556 ft, screened 525 to 535 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 9, 1985, to July 6, 1995, bimonthly measurement with chalked tape. Prior to Oct. 9, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 16 ft above sea level, from topographic map. Measuring point: Top of casing, 2.05 ft above land-surface datum prior to Mar. 2, 1988; 1.2 ft thereafter.

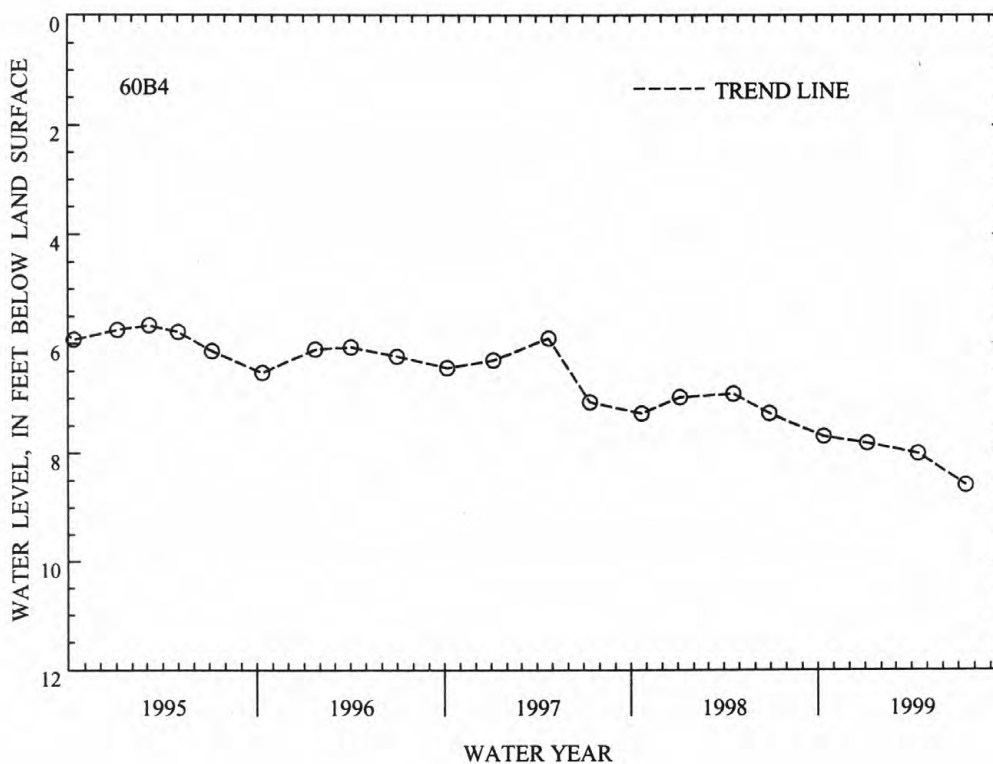
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

PERIOD OF RECORD.--February 1978 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.20 ft above land-surface datum, Feb. 1, 1978; lowest measured, 8.60 ft below land-surface datum, July 16, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 13	7.70	JAN 05	7.83	APR 14	8.02	JUL 16	8.60
WATER YEAR 1999	HIGHEST	7.70	OCT 13, 1998				
	LOWEST	8.60	JUL 16, 1999				



GROUND-WATER LEVELS

CITY OF CHESAPEAKE

364615076182101. Local number, 60C 41 SOW 164.

LOCATION.--Lat 36°46'15", long 76°18'21", Hydrologic Unit 02080208, 50 ft north of entrance road to Virginia Power powerplant, 500 ft south of Military Highway in Chesapeake. Owner: Virginia Power.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in. to 400 ft, diameter 4 in. from 400 to 928 ft, depth 928 ft, screened 770 to 780 ft, 875 to 885 ft, 918 to 928 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Nov. 25, 1982 to Oct. 12, 1995, continuous strip-chart recorder. Prior to Nov. 25, 1982, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 10 ft above sea level, from topographic map. Measuring point: Top of casing, 1.6 ft above land-surface datum prior to July 15, 1987; 1.5 ft thereafter.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

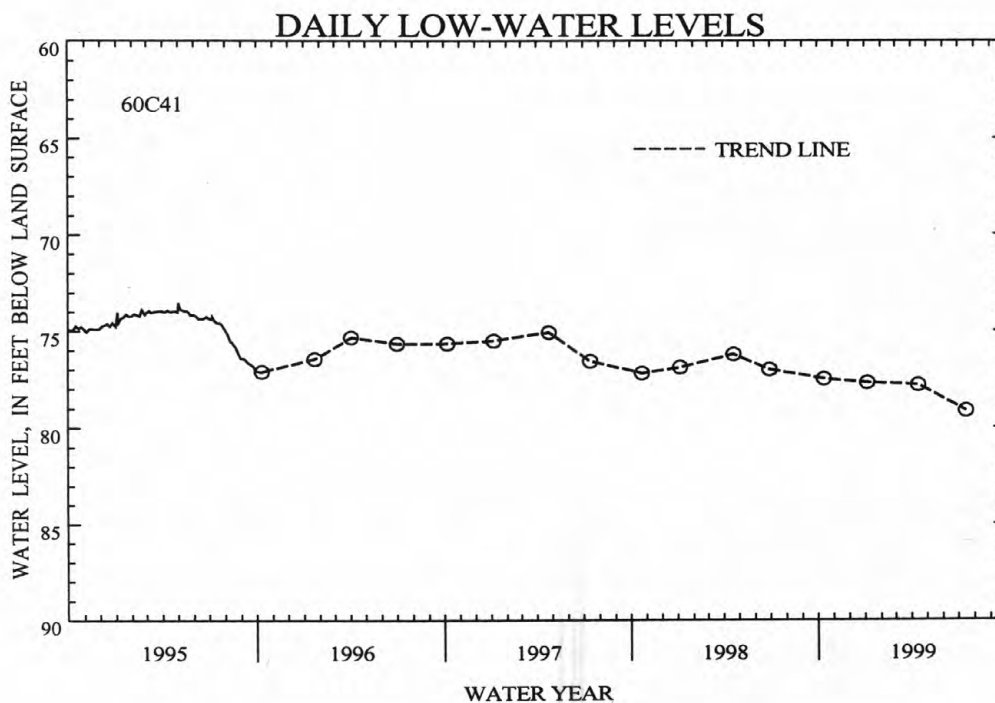
PERIOD OF RECORD.--February 1982 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 55.22 ft below land-surface datum, Mar. 15, 1983; lowest recorded, 79.13 ft below land-surface datum, July 16, 1999.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 13	77.48	JAN 05	77.68	APR 14	77.79	JUL 16	79.13

WATER YEAR 1999	HIGHEST	77.48	OCT 13, 1998
LOWEST	79.13	JUL 16, 1999	



GROUND-WATER LEVELS

CITY OF CHESAPEAKE

364227076074702. Local number, 61B 5 SOW 091B.

LOCATION.--Lat 36°42'27", long 76°07'47", Hydrologic Unit 03010205, 300 ft south of Lockheed Avenue, 0.7 mi east of intersection of State Highway 165 and Lockheed Avenue, and 3.8 mi east of Fentress. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 1,060 ft, screened 1,040 to 1,060 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 9, 1985, to July 6, 1995, bimonthly measurement with chalked tape. Prior to Oct. 9, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, 1.5 ft above land-surface datum.

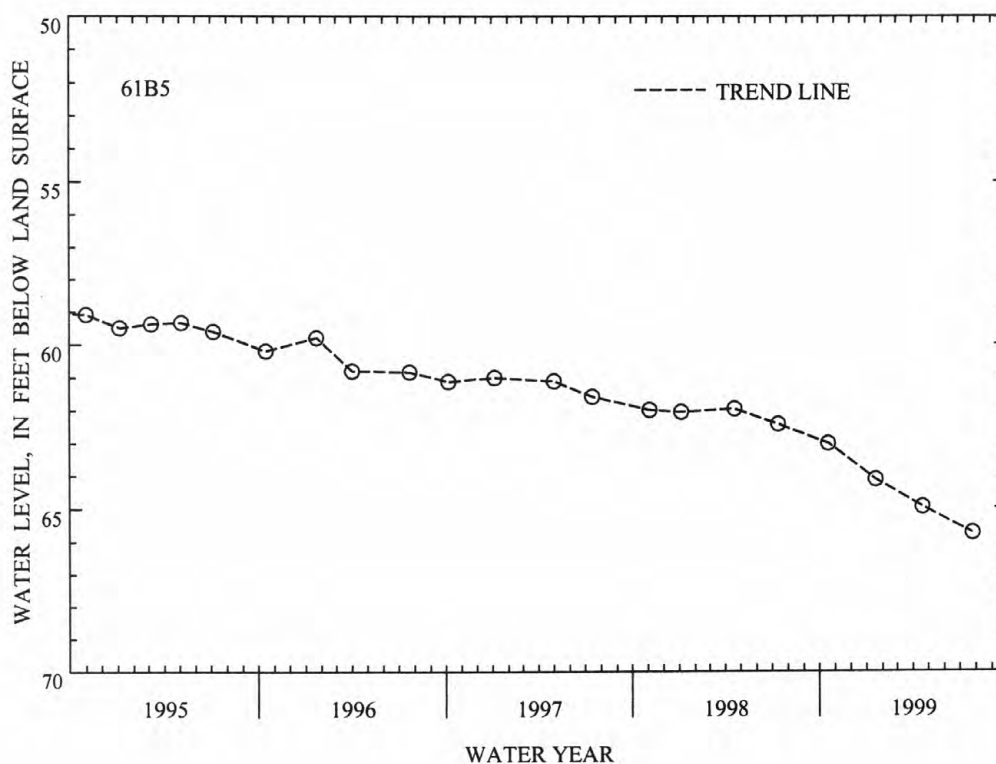
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

PERIOD OF RECORD.--June 1979 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 27.83 ft below land-surface datum, Aug. 28, 1980; lowest measured, 65.75 ft below land-surface datum, July 26, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	63.02	JAN 19	64.12	APR 20	64.96	JUL 26	65.75
WATER YEAR 1999		HIGHEST	63.02	OCT 19, 1998			
		LOWEST	65.75	JUL 26, 1999			



GROUND-WATER LEVELS

CITY OF CHESAPEAKE

364227076074703. Local number, 61B 6 SOW 091C.

LOCATION.--Lat 36°42'27", long 76°07'47", Hydrologic Unit 03010205, 300 ft south of Lockheed Avenue, 0.7 mi east of intersection of State Highway 165 and Lockheed Avenue, and 3.8 mi east of Fentress. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Virginia Beach aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 780 ft, screened 760 to 780 ft.

INSTRUMENTATION.--Occasional measurement with manometer by Virginia Department of Environmental Quality - Water Division personnel. Oct. 9, 1985, to July 6, 1995, bimonthly measurement with chalked tape. Prior to Oct. 9, 1985, occasional measurement with manometer.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, 7.0 ft above land-surface datum prior to Jan. 11, 1989; 1.2 ft thereafter.

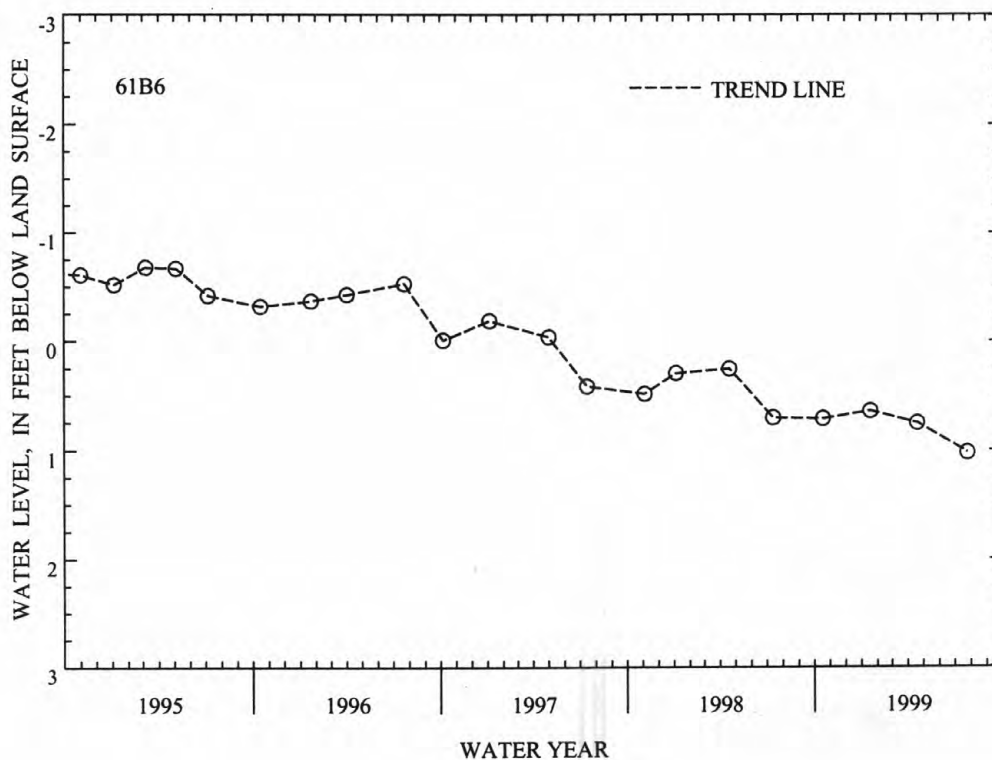
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

PERIOD OF RECORD.--July 1979 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.37 ft above land-surface datum, July 26, 1979; lowest measured, 1.02 ft below land-surface datum, July 26, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	0.71	JAN 19	0.64	APR 20	0.75	JUL 26	1.02
WATER YEAR 1999	HIGHEST	0.64	JAN 19, 1999				
	LOWEST	1.02	JUL 26, 1999				



GROUND-WATER LEVELS

CITY OF CHESAPEAKE

364231076140801. Local number, 61B 8 SOW 134.

LOCATION.--Lat 36°42'31", long 76°14'08", Hydrologic Unit 03010205, at Great Bridge Junior High School, in Great Bridge. Owner: Virginia Department of Environmental Quality.

AQUIFER.--St. Marys-Choptank aquifer of Miocene age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 8 in., depth 100 ft, screened 84 to 94 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 9, 1985, to July 5, 1995, bimonthly measurement with chalked tape. Prior to Oct. 9, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 20 ft above sea level, from topographic map. Measuring point: Top of casing, 0.8 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

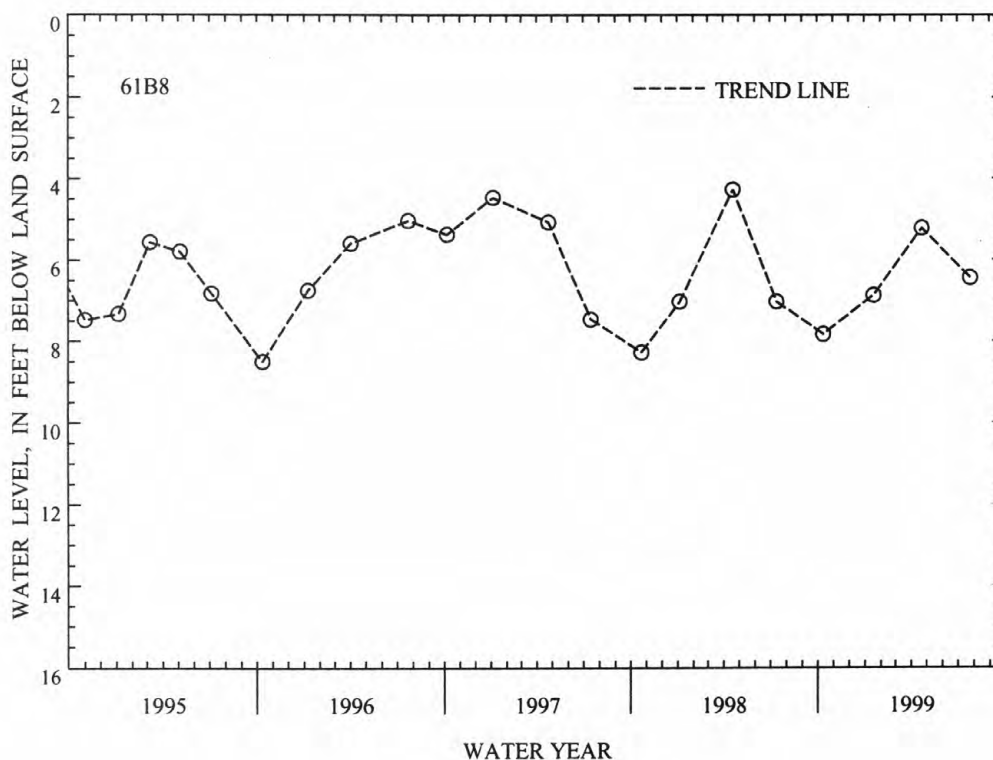
PERIOD OF RECORD.--January 1979 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.80 ft below land-surface datum, Apr. 14, 1993; lowest measured, 16.07 ft below land-surface datum, Sept. 18, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 13	7.83	JAN 19	6.87	APR 23	5.22	JUL 26	6.44

WATER YEAR 1999	HIGHEST	5.22	APR 23, 1999
	LOWEST	7.83	OCT 13, 1998



GROUND-WATER LEVELS

CITY OF CHESAPEAKE

364227076074706. Local number, 61B 12 SOW 091E.

LOCATION.--Lat 36°42'27", long 76°07'47", Hydrologic Unit 03010205, 300 ft south of Lockheed Avenue, 0.7 mi east of intersection of State Highway 165 and Lockheed Avenue, and 3.8 mi east of Fentress. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Lower Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in. to 1,630 ft, diameter 2 in. from 1,630 to 1,830 ft, depth 1,830 ft, screened 1,820 to 1,830 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 6, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, 1.4 ft above land-surface datum.

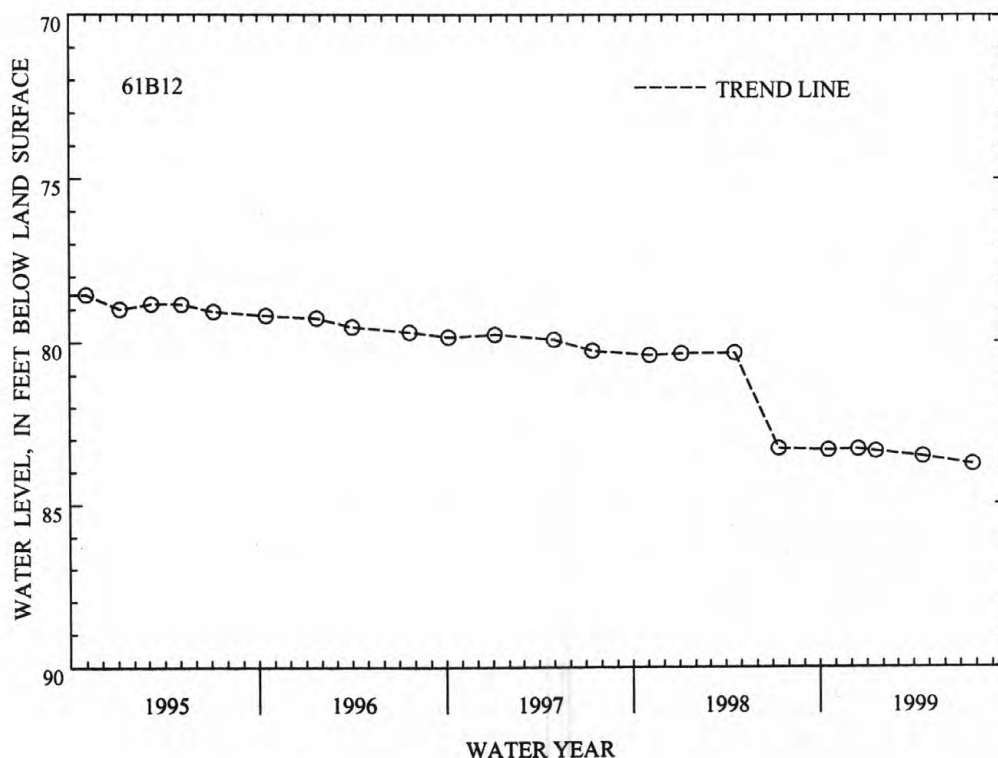
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown. Low water-level drawdown after April 1998 is the result of pumping of the well. Cause of nonrecovery to pre-pumpage level is unknown.

PERIOD OF RECORD.--March 1989 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 41.50 ft below land-surface datum, June 21, 1989; lowest measured, 83.78 ft below land-surface datum, July 26, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	83.34	JAN 19	83.38	APR 20	83.54	JUL 26	83.78
WATER YEAR 1999		HIGHEST	83.34	OCT 19, 1998			
		LOWEST	83.78	JUL 26, 1999			



GROUND-WATER LEVELS

CITY OF CHESAPEAKE

364227076074708. Local number, 61B 14 SOW 091G.

LOCATION.--Lat 36°42'27", long 76°07'47", Hydrologic Unit 03010205, 300 ft south of Lockheed Avenue, 0.7 mi east of intersection of State Highway 165 and Lockheed Avenue, and 3.8 mi east of Fentress. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in. to 987 ft, diameter 2 in. from 987 to 1,110 ft, depth 1,110 ft, screened 1,090 to 1,100 ft.

INSTRUMENTATION.--Continuous strip-chart recorder. July 6, 1995 to Feb. 13, 1997, occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 6, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, 0.9 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

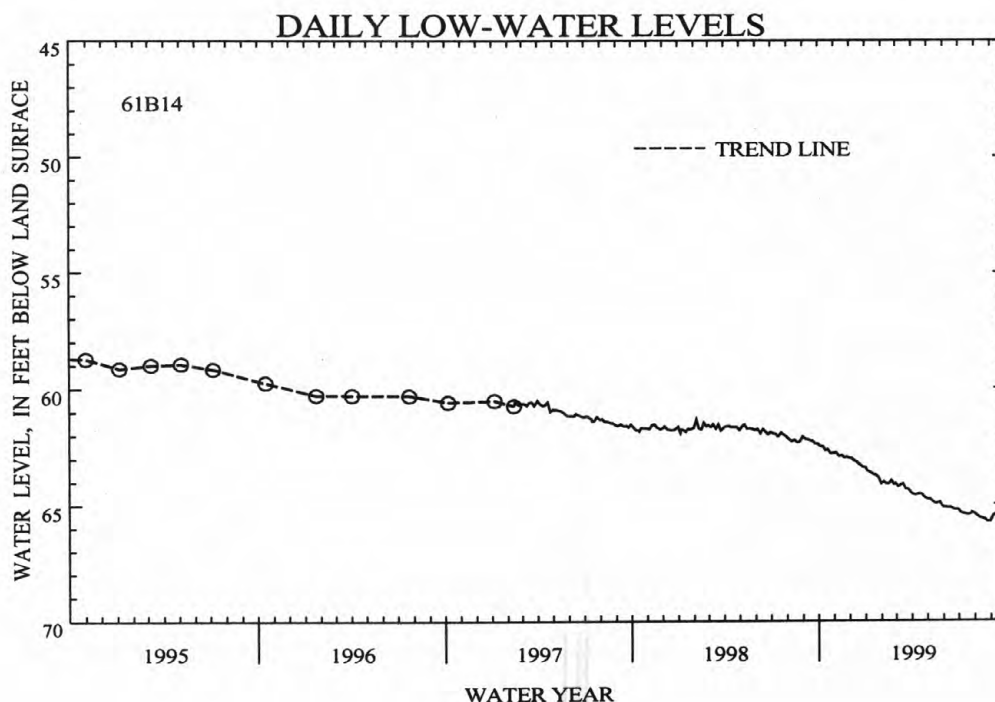
PERIOD OF RECORD.--March 1989 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 51.30 ft below land-surface datum, Mar. 22, 1989; lowest measured, 65.75 ft below land-surface datum, Aug. 25, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	62.49	62.78	63.01	63.57	64.02	64.23	64.59	64.77	65.12	65.36	65.50	65.50
10	62.50	62.91	63.12	63.62	64.10	64.16	64.58	64.87	65.13	65.40	65.58	65.42
15	62.67	62.88	63.18	63.70	64.11	64.12	64.53	64.95	65.13	65.42	65.60	65.68
20	62.65	62.98	63.29	63.73	63.97	64.34	64.57	64.94	65.22	65.45	65.65	65.65
25	62.80	62.95	63.38	63.82	64.13	64.35	64.70	64.90	65.22	65.39	65.75	65.72
EOM	62.78	63.00	63.40	64.10	64.09	64.53	64.77	65.10	65.22	65.40	65.74	65.73

WATER YEAR 1999	HIGHEST INSTANTANEOUS	62.38	OCT 01, 1998
	LOWEST INSTANTANEOUS	65.75	AUG 25, 1999



GROUND-WATER LEVELS

CITY OF CHESAPEAKE

364227076074709. Local number, 61B 15 SOW 091H.

LOCATION.--Lat 36°42'27", long 76°07'47", Hydrologic Unit 03010205, 300 ft south of Lockheed Avenue, 0.7 mi east of intersection of State Highway 165 and Lockheed Avenue, and 3.8 mi east of Fentress. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Virginia Beach aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in. to 700 ft, diameter 2 in. from 674 to 790 ft, depth 790 ft, screened 759 to 769 ft.

INSTRUMENTATION.--Occasional measurement with manometer by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 6, 1995, bimonthly measurement with manometer.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, 1.1 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

PERIOD OF RECORD.--March 1989 to current year.

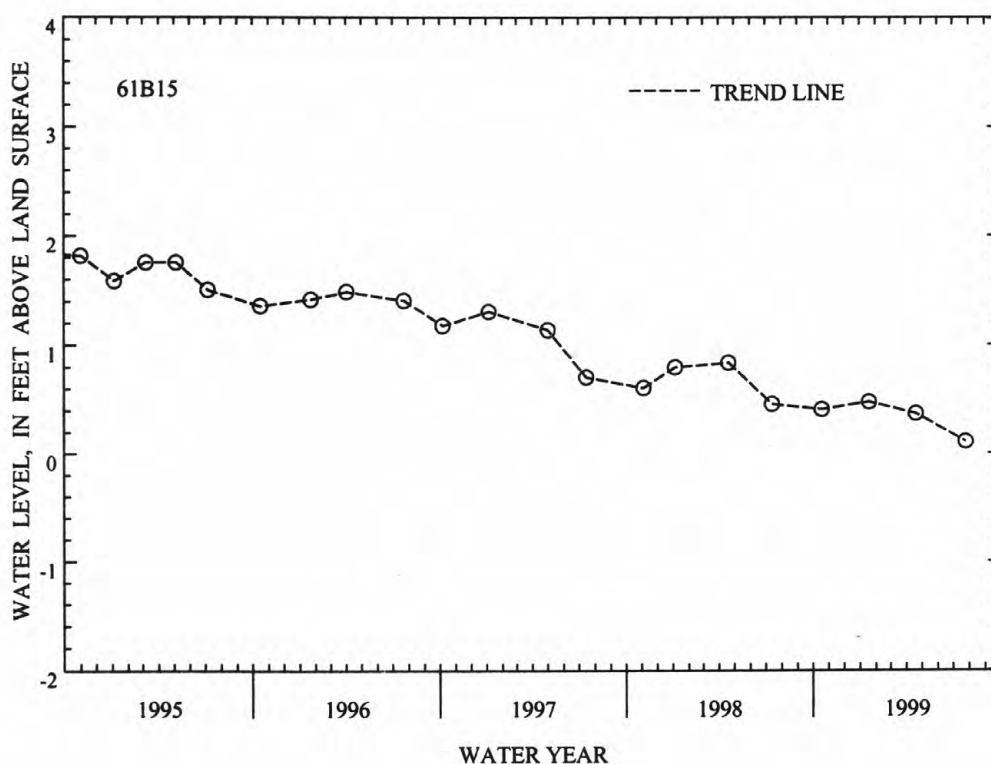
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.75 ft above land-surface datum, Apr. 20, 1989; lowest measured, 0.11 ft above land-surface datum, July 26, 1999.

WATER LEVEL, IN FEET ABOVE LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	0.41	JAN 19	0.48	APR 20	0.37	JUL 26	0.11

WATER YEAR 1999	HIGHEST	0.48	JAN 19, 1999
	LOWEST	0.11	JUL 26, 1999

NOTE.--Flowing well; readings are above land-surface datum.



GROUND-WATER LEVELS

CITY OF CHESAPEAKE

364227076074710. Local number, 61B 16 SOW 091J.

LOCATION.--Lat 36°42'27", long 76°07'47", Hydrologic Unit 03010205, 300 ft south of Lockheed Avenue, 0.7 mi east of intersection of State Highway 165 and Lockheed Avenue, and 3.8 mi east of Fentress. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Chickahominy-Piney Point aquifer of Eocene-Oligocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in. to 602 ft, diameter 2 in. from 586 to 690 ft, depth 690 ft, screened 670 to 680 ft.

INSTRUMENTATION.--Occasional measurement with manometer by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 6, 1995, bimonthly measurement with manometer.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, 1.1 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

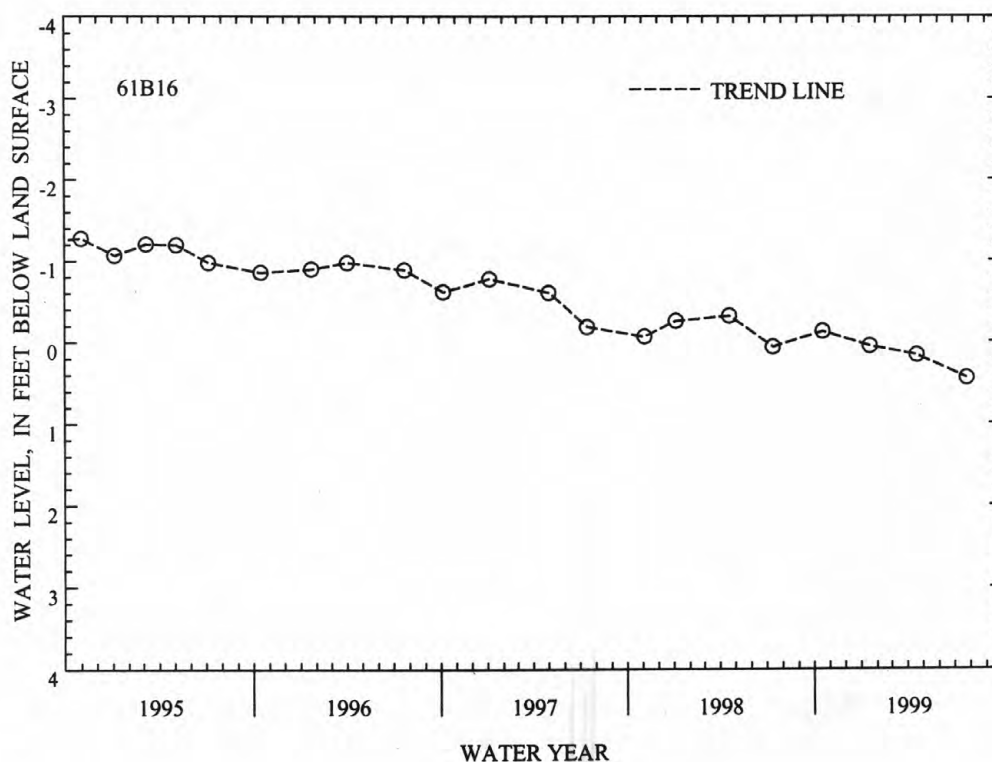
PERIOD OF RECORD.--March 1989 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.31 ft above land-surface datum, Mar. 13, 1989; lowest measured, 0.44 ft below land-surface datum, July 26, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	-0.13	JAN 19	0.05	APR 20	0.16	JUL 26	0.44
WATER YEAR 1999	HIGHEST	-0.13	OCT 19, 1998				
	LOWEST	0.44	JUL 26, 1999				

NOTE.--Prior to Jan. 19, 1999, flowing well; readings are above land-surface datum.



GROUND-WATER LEVELS

CITY OF CHESAPEAKE

364227076074711. Local number, 61B 17 SOW 091K.

LOCATION.--Lat 36°42'27", long 76°07'47", Hydrologic Unit 03010205, 300 ft south of Lockheed Avenue, 0.7 mi east of intersection of State Highway 165 and Lockheed Avenue, and 3.8 mi east of Fentress. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in. to 78 ft, diameter 2 in. from 78 to 108 ft, depth 108 ft, screened 88 to 98 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 6, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, 1.3 ft above land-surface datum.

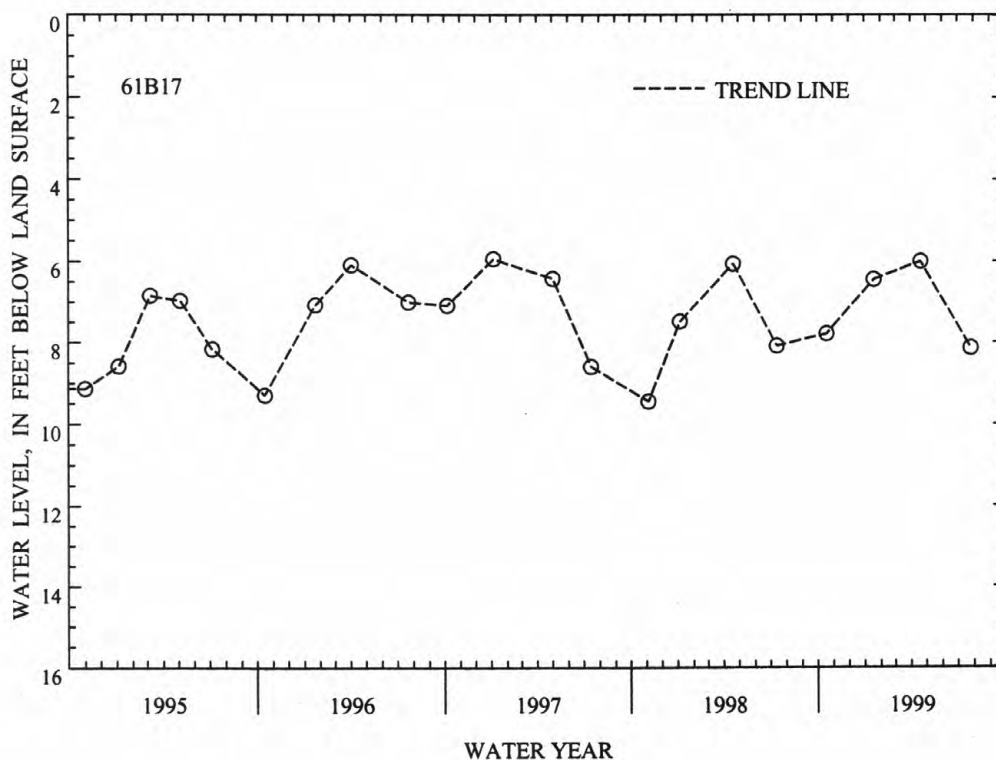
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--March 1989 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.00 ft below land-surface datum, Jan. 30, 1991; lowest measured, 9.44 ft below land-surface datum, Nov. 5, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	7.78	JAN 19	6.44	APR 20	6.00	JUL 26	8.13
WATER YEAR 1999	HIGHEST	6.00	APR 20, 1999				
	LOWEST	8.13	JUL 26, 1999				



GROUND-WATER LEVELS

CITY OF CHESAPEAKE

364227076074713. Local number, 61B 19 SOW 091M.

LOCATION.--Lat 36°42'27", long 76°07'47", Hydrologic Unit 03010205, 300 ft south of Lockheed Avenue, 0.7 mi east of intersection of State Highway 165 and Lockheed Avenue, and 3.8 mi east of Fentress. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 20 ft, screened 10 to 20 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 6, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, 1.1 ft above land-surface datum.

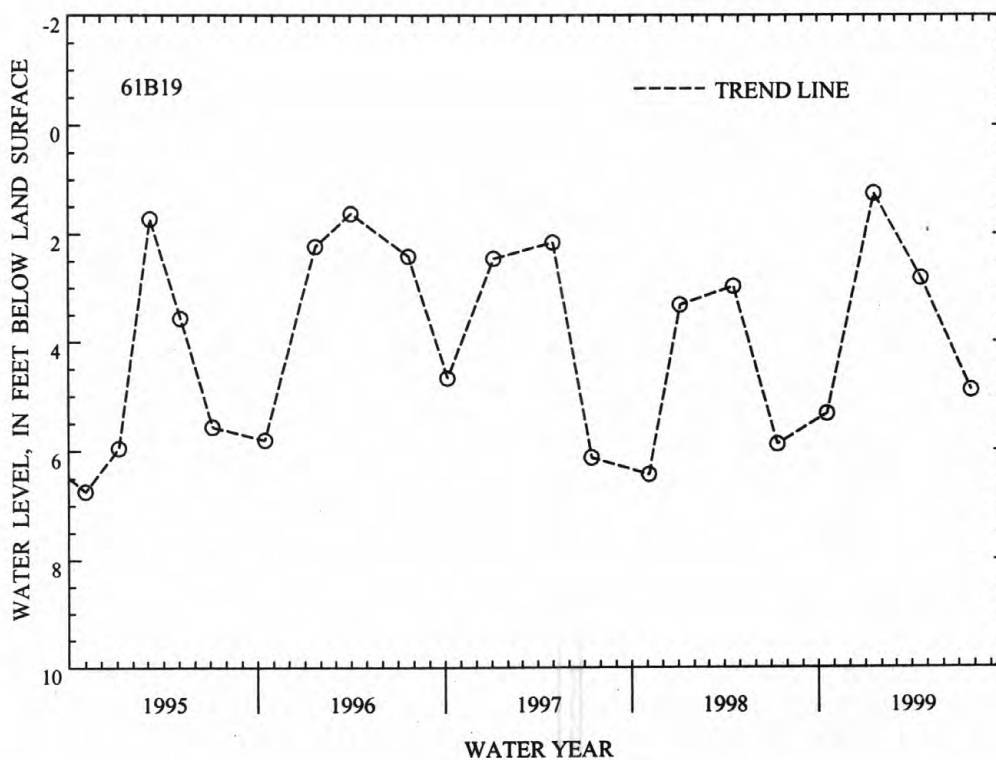
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--March 1989 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.09 ft below land-surface datum, Feb. 26, 1992; lowest measured, 6.74 ft below land-surface datum, Nov. 1, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	5.32	JAN 19	1.25	APR 20	2.82	JUL 26	4.89
WATER YEAR 1999	HIGHEST	1.25	JAN 19, 1999				
	LOWEST	5.32	OCT 19, 1998				



GROUND-WATER LEVELS

CHESTERFIELD COUNTY

372519077264701. Local number, 51H 92.

LOCATION.--Lat 37°25'19", long 77°26'47", Hydrologic Unit 02080206, 500 ft north of Alcott Road at Bensley, 0.3 mi southwest of the intersection of U.S. Highways 1 and 301 (Jefferson Davis Highway) and Alcott Road. Owner: U.S. Geological Survey.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 3 in., depth 53 ft, screened 51 to 53 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Oct. 1, 1985, to Jan. 23, 1991, digital recorder--60-minute punch. Prior to Oct. 1, 1985, monthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 102.31 ft above sea level. Measuring point: Top of casing, 1.5 ft above land-surface datum.

REMARKS.--Water level measurements after Sept. 20, 1996 affected by nearby pumpage.

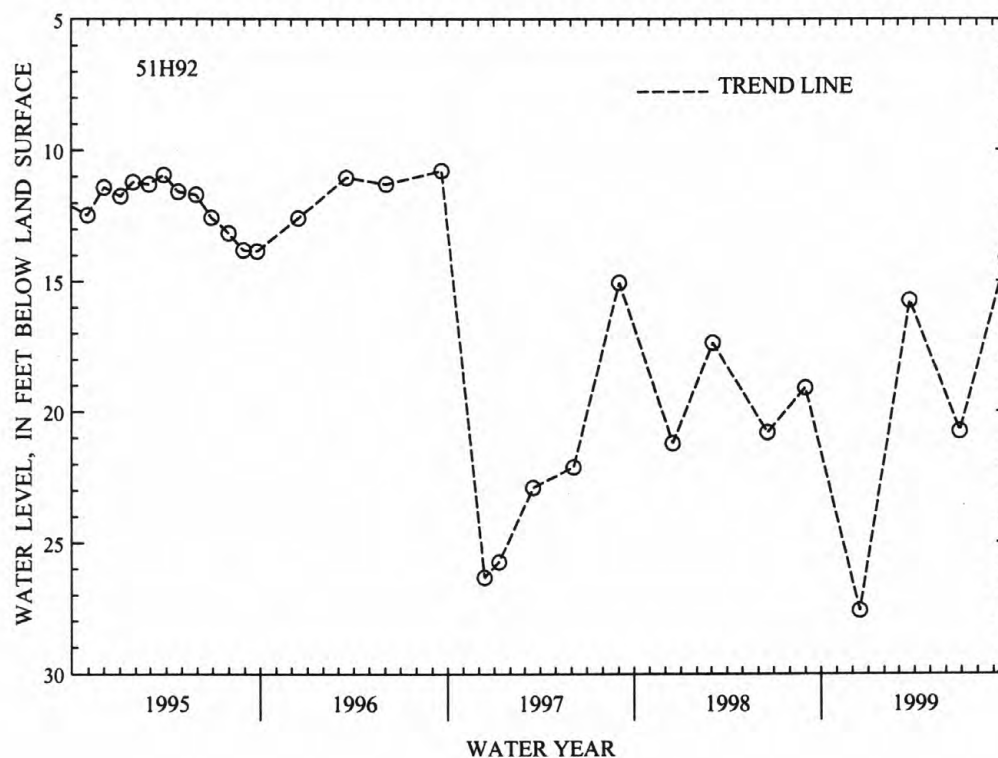
PERIOD OF RECORD.--April 1985 to current year. Unpublished records available prior to October 1987 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 8.95 ft below land-surface datum, June 14, 1989; lowest measured, 27.60 ft below land-surface datum, Dec. 15, 1998, result of local pumpage.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 15	27.60	MAR 23	15.74	JUN 28	20.75	SEP 27	14.09

WATER YEAR 1999	HIGHEST	14.09	SEP 27, 1999
	LOWEST	27.60	DEC 15, 1998



GROUND-WATER LEVELS

CHESTERFIELD COUNTY

372519077264704. Local number, 51H 95.

LOCATION.--Lat 37°25'19", long 77°26'47", Hydrologic Unit 02080206, 500 ft north of Alcott Road at Bensley and 0.3 mi southwest of the intersection of U.S. Highways 1 and 301 (Jefferson Davis Highway) and Alcott Road. Owner: U.S. Geological Survey.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 3 in., depth 4.7 ft, screened 2.7 to 4.7 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to Jan. 23, 1991, digital recorder--60-minute punch and monthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 102.23 ft above sea level. Measuring point: Top of casing, 1.9 ft above land-surface datum.

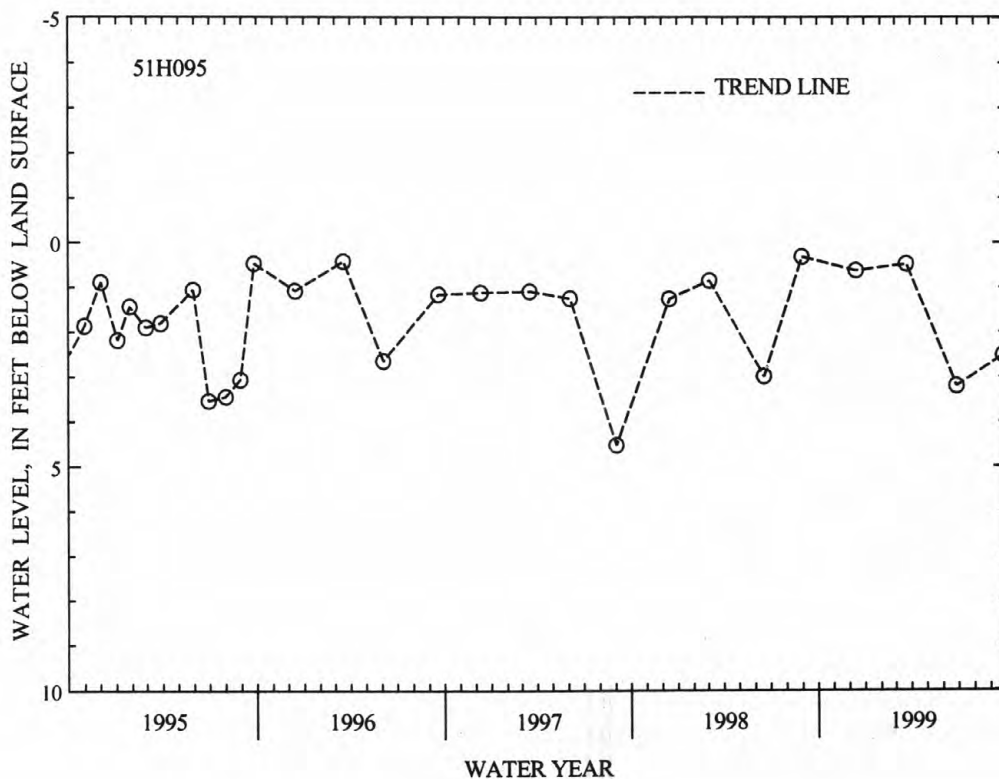
REMARKS.--Upper limit of recorded water-level data is limited by well construction. Water level affected by pumping and sampling at different times during the year.

PERIOD OF RECORD.--April 1985 to current year. Unpublished records available prior to October 1987 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.02 ft below land-surface datum, Jan. 11, 12, 1990; lowest recorded, 4.52 ft below land-surface datum, Sept. 3, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 15	0.63	MAR 23	0.48	JUN 28	3.20	SEP 27	2.51
WATER YEAR 1999		HIGHEST	0.48	MAR 23, 1999			
		LOWEST	3.20	JUN 28, 1999			



GROUND-WATER LEVELS

CHESTERFIELD COUNTY

372519077264605. Local number, 51H130.

LOCATION.--Lat 37°25'19", long 77°26'46", Hydrologic Unit 02080206, 500 ft north of Alcott Road at Bensley and 0.3 mi southwest of the intersection of U.S. Highway 1 and 301 (Jefferson Davis Highway) and Alcott Road. Owner: U.S. Geological Survey.

AQUIFER.--Petersburg Granite of Mississippian age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in., depth 96 ft, cased to 71 ft, open hole 71 to 96 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to Oct. 1, 1995, monthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 102.17 ft above sea level. Measuring point: Top of casing, 1.64 ft above land-surface datum.

REMARKS.--Water level affected by pumping and sampling at different times during the year.

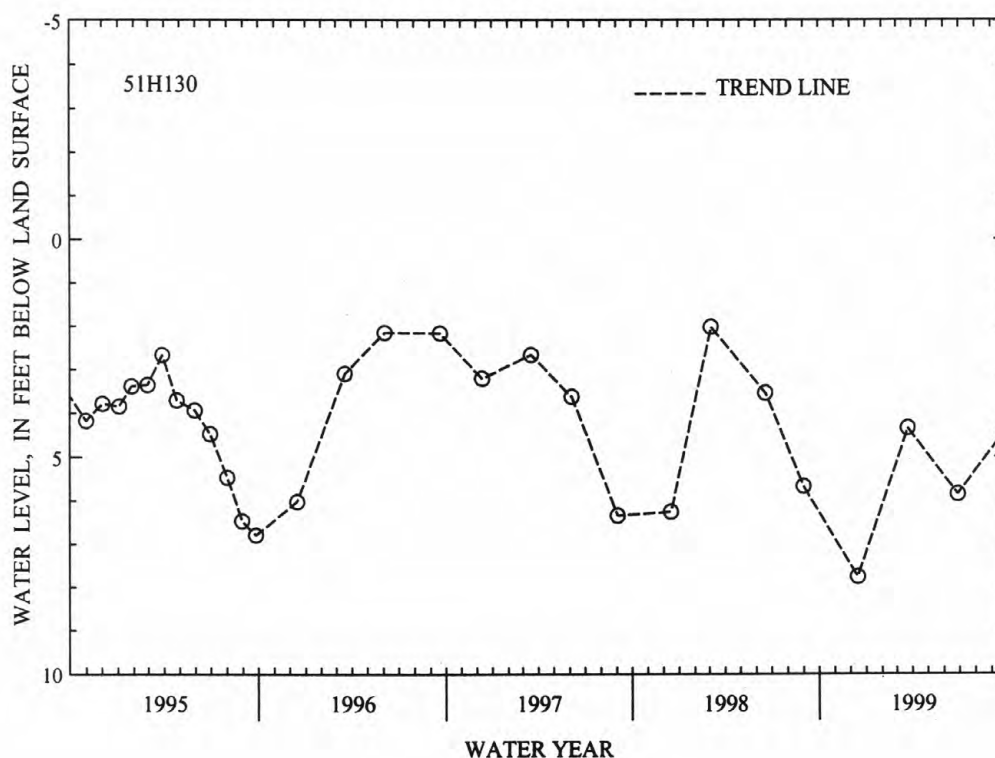
PERIOD OF RECORD.--May 1985 to current year. Unpublished records available prior to October 1988 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.64 ft above land-surface datum, June 1, 1989; lowest measured, 7.76 ft below land-surface datum, Dec. 15, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 15	7.76	MAR 23	4.34	JUN 28	5.85	SEP 27	4.42

WATER YEAR 1999	HIGHEST	4.34	MAR 23, 1999
	LOWEST	7.76	DEC 15, 1998



GROUND-WATER LEVELS

CHESTERFIELD COUNTY

372031077200001. Local number, 52G 22.

LOCATION.--Lat 37°20'31", long 77°20'00", Hydrologic Unit 02080206, at Virginia Department of Transportation salt storage facility, 200 ft east of intersection of State Highway 10 and Interstate 295. Owner: U.S. Geological Survey.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 3 in., depth 16.77 ft, screened 11.77 ft to 16.77 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Unpublished digital recorder data November 13, 1995, to April 2, 1996.

DATUM.--Elevation of land-surface datum is 70 ft above sea level. Measuring point: Top of casing, 2.59 ft above land-surface datum.

REMARKS.--Well drilled as part of Fall Zone ground-water study.

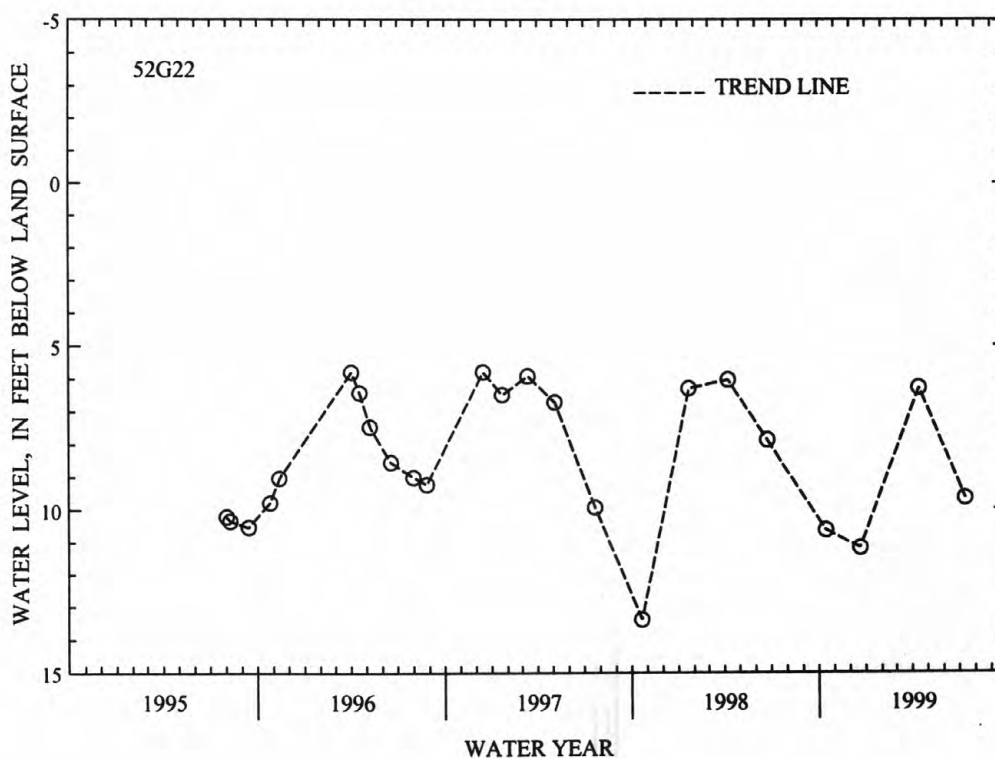
PERIOD OF RECORD.--August 1995 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.79 ft below land-surface datum, Dec. 16, 1996; lowest measured, 13.39 ft below land-surface datum, Oct. 21, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	10.64	DEC 21	11.19	APR 15	6.28	JUL 13	9.66

WATER YEAR 1999	HIGHEST	6.28	APR 15, 1999
	LOWEST	11.19	DEC 21, 1998



GROUND-WATER LEVELS

CHESTERFIELD COUNTY

372031077200003. Local number, 52G 24.

LOCATION.--Lat 37°20'31", long 77°20'00", Hydrologic Unit 02080206, at Virginia Department of Transportation salt storage facility, 200 ft east of intersection of State Highway 10 and Interstate 295. Owner: U.S. Geological Survey.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 2 in., depth 64.79 ft, screened 59.79 ft to 64.79 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Unpublished digital recorder data March 5, 1996, to April 2, 1996.

DATUM.--Elevation of land-surface datum is 70 ft above sea level. Measuring point: Top of casing, 2.35 ft above land-surface datum.

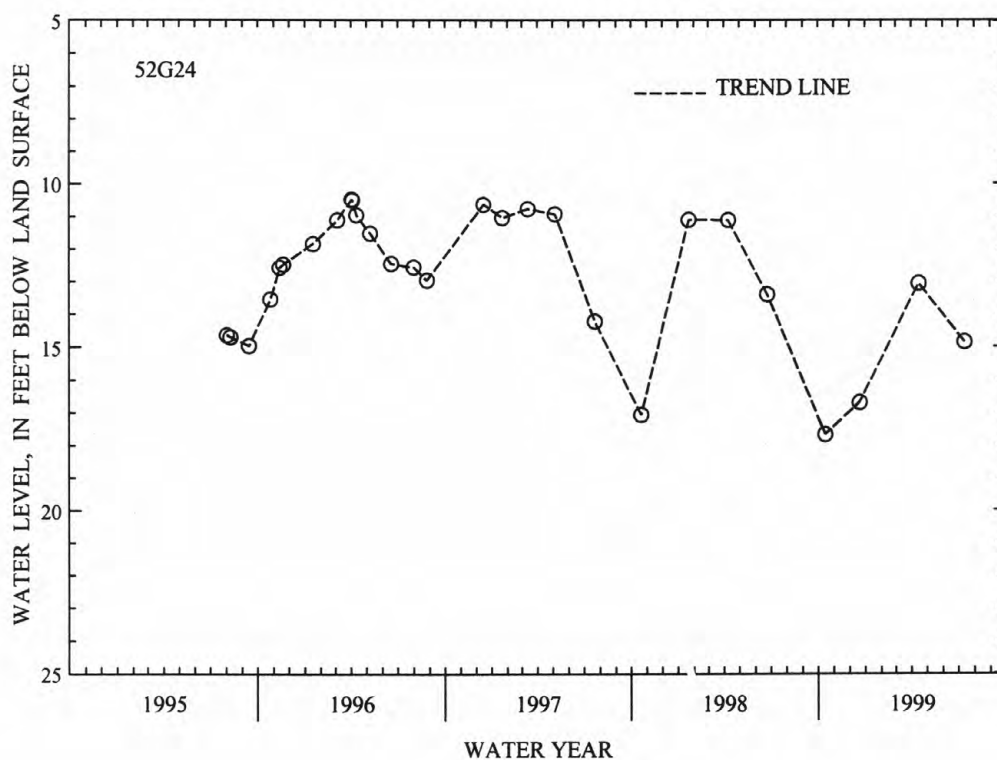
REMARKS.--Well drilled as part of Fall Zone ground-water study.

PERIOD OF RECORD.--August 1995 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.47 ft below land-surface datum, Apr. 2, 1996; lowest measured, 17.67 ft below land-surface datum, Oct. 15, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	17.67	DEC 21	16.70	APR 15	13.07	JUL 13	14.85
WATER YEAR 1999	HIGHEST	13.07	APR 15, 1999				
	LOWEST	17.67	OCT 15, 1998				



GROUND-WATER LEVELS

CLARKE COUNTY

390348078035501. Local number, 46W175.

LOCATION.--Lat 39°03'48", long 78°03'55", Hydrologic Unit 02070007, 1.5 mi east of the intersection of U.S. Highways 17/50 and 340 at Blandy Experimental Farm. Owner: University of Virginia.

AQUIFER.--Conococheague Limestone of Middle Cambrian age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in., depth 80.4 ft, cased to 24 ft, open hole 24 to 80.4 ft.

INSTRUMENTATION.--Digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 600 ft above sea level, from topographic map. Measuring point: Top of casing, 3.7 ft above land-surface datum.

REMARKS.--Missing record due to recorder malfunction.

PERIOD OF RECORD.--July 1987 to current year.

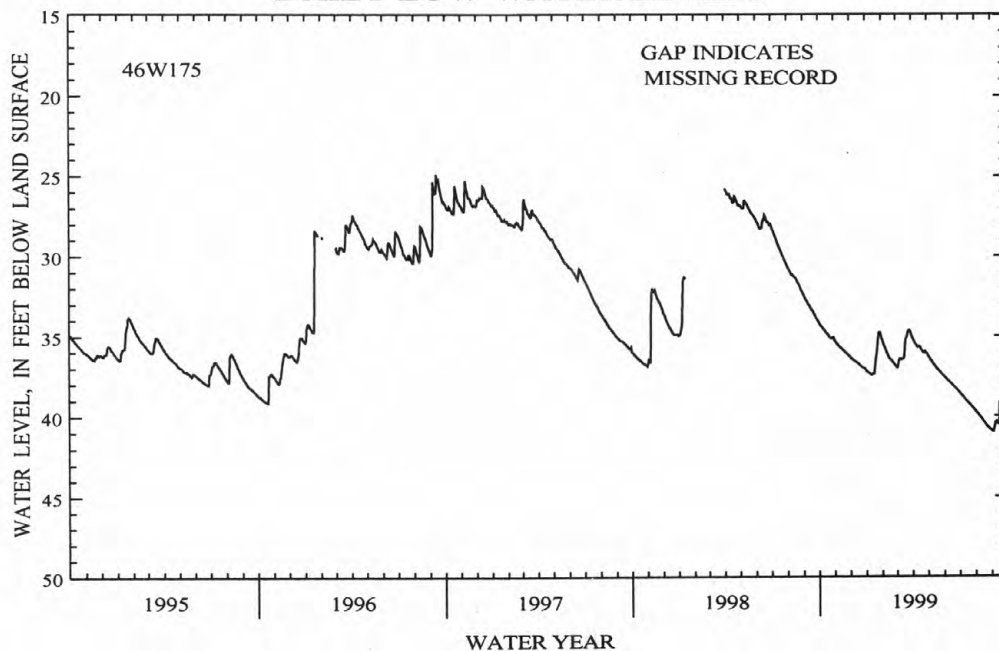
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 24.63 ft below land-surface datum, Apr. 1, 1998, may have gone higher during period of missing record, Jan. 16 to Apr. 1, 1998; lowest recorded, 44.51 ft below land-surface datum, Feb. 11, 13-16, 1992.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	34.31	35.43	36.41	37.27	35.60	36.71	35.36	36.42	37.66	38.69	39.83	40.97
10	34.51	35.64	36.55	37.40	36.01	36.45	35.70	36.66	37.81	38.86	40.04	40.41
15	34.74	35.79	36.68	37.36	36.35	36.41	35.66	36.88	37.98	39.06	40.23	40.53
20	34.94	35.94	36.80	36.51	36.54	35.16	35.93	37.09	38.15	39.23	40.47	39.23
25	35.13	36.10	36.94	34.90	36.74	34.64	36.01	37.25	38.31	39.40	40.69	39.31
EOM	35.19	36.26	37.09	35.11	36.87	35.03	36.13	37.47	38.48	39.63	40.86	38.65

WATER YEAR 1999	HIGHEST INSTANTANEOUS	34.03	OCT 01, 1998
	LOWEST INSTANTANEOUS	40.97	SEP 4-5, 1999

DAILY LOW-WATER LEVELS



GROUND-WATER LEVELS

CITY OF COLONIAL HEIGHTS

371644077244601. Local number, 51G 1.

LOCATION.--Lat 37°16'44", long 77°24'46", Hydrologic Unit 02080207, 200 ft west of U.S. Highways 1 and 301, 0.5 mi south of the intersection of State Highway 144 (Ashby Avenue) and U.S. Highways 1 and 301 (Boulevard) in Colonial Heights. Owner: Dean Whittington.

AQUIFER.--Petersburg Granite of Mississippian age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in., depth 100 ft, cased to 50 ft, open hole 50 to 100 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel.

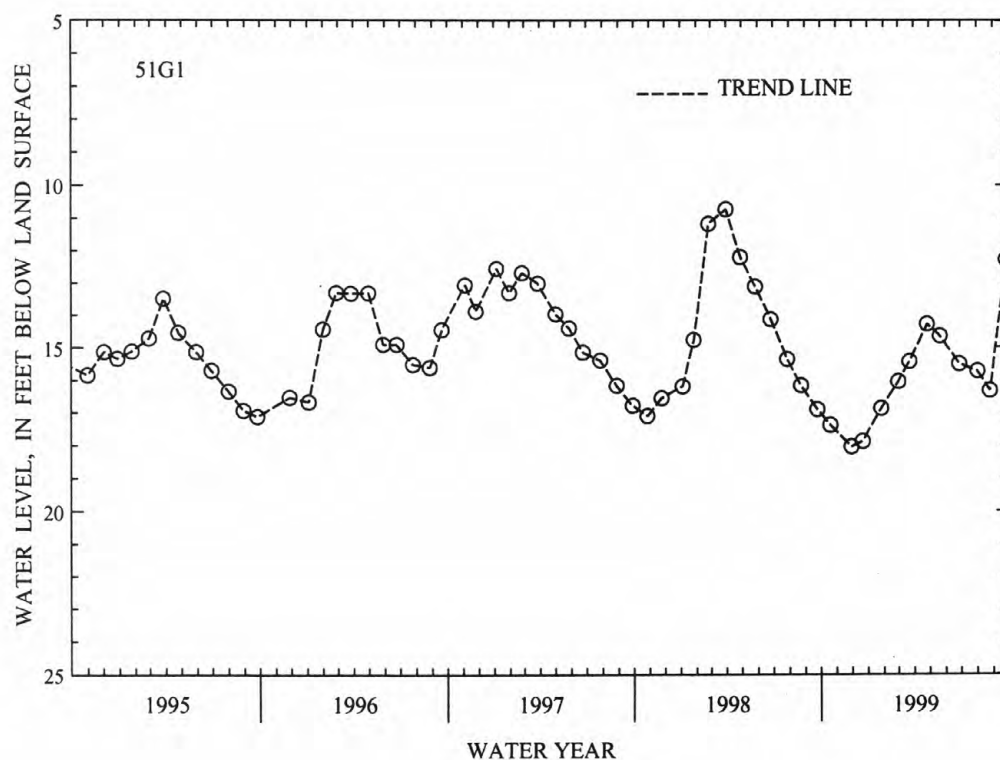
DATUM.--Elevation of land-surface datum is 57.30 ft above sea level. Measuring point: Top of casing, 1.0 ft above land-surface datum.

PERIOD OF RECORD.--October 1939 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.73 ft below land-surface datum, Jan. 26, 1978, Mar. 31, 1998; lowest measured, 19.26 ft below land-surface datum, Dec. 3, 1963.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	17.38	DEC 22	17.88	MAR 01	16.05	APR 26	14.28	JUN 28	15.51	AUG 26	16.33
NOV 30	18.04	JAN 27	16.87	MAR 23	15.44	MAY 21	14.65	AUG 02	15.73	SEP 27	12.28
WATER YEAR 1999		HIGHEST	12.28	SEP 27, 1999							
		LOWEST	18.04	NOV 30, 1998							



GROUND-WATER LEVELS

FAIRFAX COUNTY

385638077220101. Local number, 52V 2.

LOCATION.--Lat 38°56'58", long 77°22'01", Hydrologic Unit 02070008, at U.S. Geological Survey National Center in Reston. Owner: U.S. Geological Survey.

AQUIFER.--Manassas Sandstone of Triassic age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 8 in., depth 205 ft, cased to 35 ft, open hole 35 to 205 ft.

INSTRUMENTATION.--Electronic data logger--15-minute record interval. Prior to Sept. 1, 1996, continuous strip-chart recorder.

DATUM.--Elevation of land-surface datum is 390 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.

REMARKS.--Missing record due to recorder malfunction.

PERIOD OF RECORD.--October 1976 to current year.

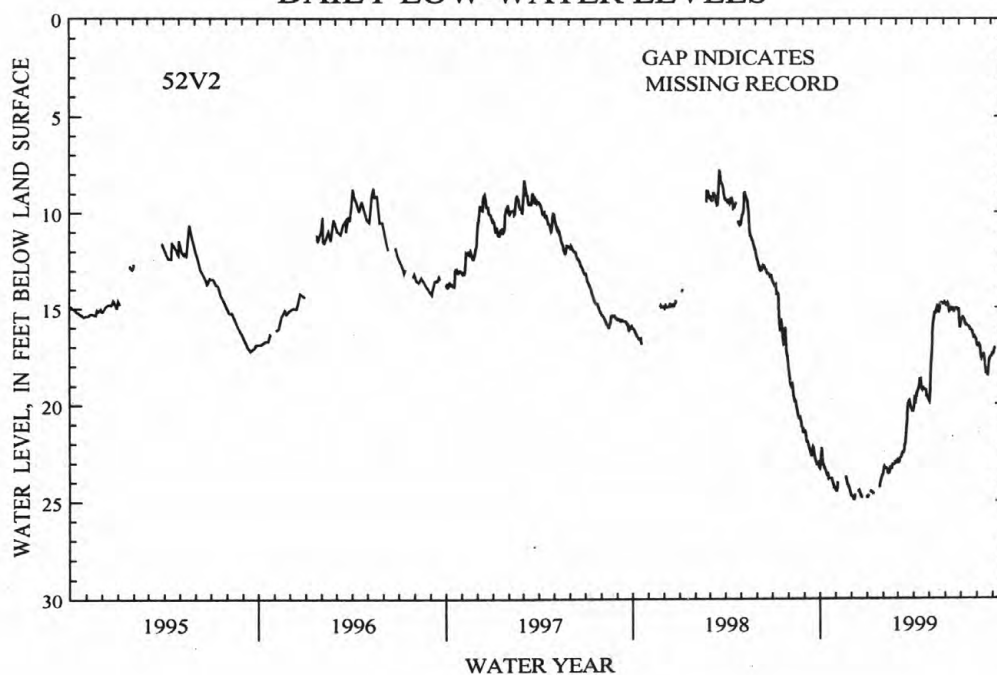
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 6.47 ft below land-surface datum, Mar. 30, 1984; lowest recorded, 24.92 ft below land-surface datum, Dec. 7-8, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	22.24	---	24.85	24.53	23.29	22.96	19.80	18.58	14.86	15.52	16.91	17.27
10	---	---	24.65	24.53	23.48	22.54	19.27	15.85	15.14	15.65	17.38	---
15	---	---	24.47	24.59	23.27	22.16	18.78	15.25	15.00	15.90	17.41	16.80
20	---	---	24.73	24.39	23.10	21.00	19.20	14.92	15.16	16.08	18.38	16.34
25	---	---	24.68	24.30	22.96	19.81	19.28	14.72	15.03	16.24	18.38	16.08
EOM	---	---	24.78	23.65	23.02	20.31	19.73	14.74	15.56	16.58	17.53	15.81

WATER YEAR 1999	HIGHEST INSTANTANEOUS	14.63	JUN 2-3, 1999
	LOWEST INSTANTANEOUS	24.92	DEC 7-8, 1998

DAILY LOW-WATER LEVELS



GROUND-WATER LEVELS

CITY OF FRANKLIN

364033076562604. Local number, 55B 67 SOW 145D.

LOCATION.--Lat 36°40'33", long 76°56'26", Hydrologic Unit 03010202, at P. D. Camp Community College in Franklin.
Owner: Virginia Department of Environmental Quality.

AQUIFER.--Aquia aquifer of Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 140 ft, screened 130 to 140 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 34 ft above sea level, from topographic map. Measuring point: Top of casing, 1.15 ft above land-surface datum.

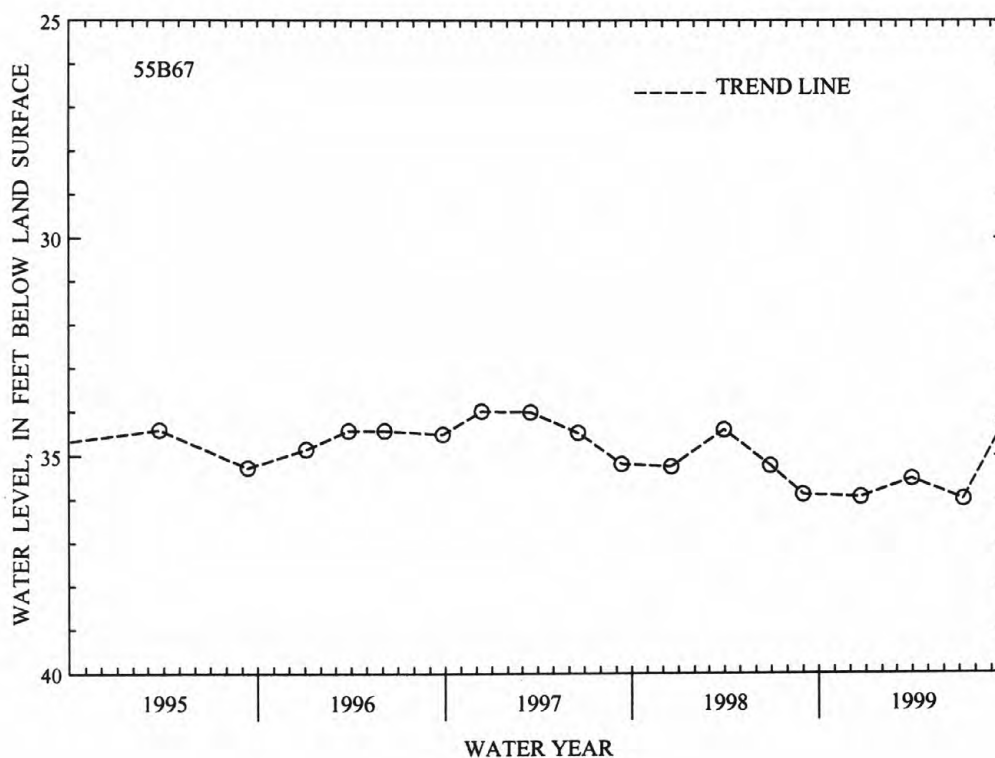
REMARKS.--Water level affected by regional drawdown.

PERIOD OF RECORD.--November 1984 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 29.51 ft below land-surface datum, Mar. 19, 1985;
lowest measured, 35.99 ft below land-surface datum, July 9, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 22	35.94	MAR 31	35.52	JUL 09	35.99	SEP 27	34.23
WATER YEAR 1999	HIGHEST	34.23	SEP 27, 1999				
	LOWEST	35.99	JUL 09, 1999				



GROUND-WATER LEVELS

GLOUCESTER COUNTY

372621076404201. Local number, 57H 20 SOW 192A.

LOCATION.--Lat 37°26'21", long 76°40'42", Hydrologic Unit 02080107, 80 ft north of State Highway 684 (Starvation Road), 1.1 mi northeast of intersection of State Highways 617 and 684. Owner: St. Laurent Paper Products Corporation (formerly Chesapeake Corporation).

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in. 200 ft, diameter 2 in. 200 to 910 ft, depth 910 ft, screened 900 to 910 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 6 ft above sea level, from topographic map. Measuring point: Top of inner casing, 1.5 ft above land-surface datum.

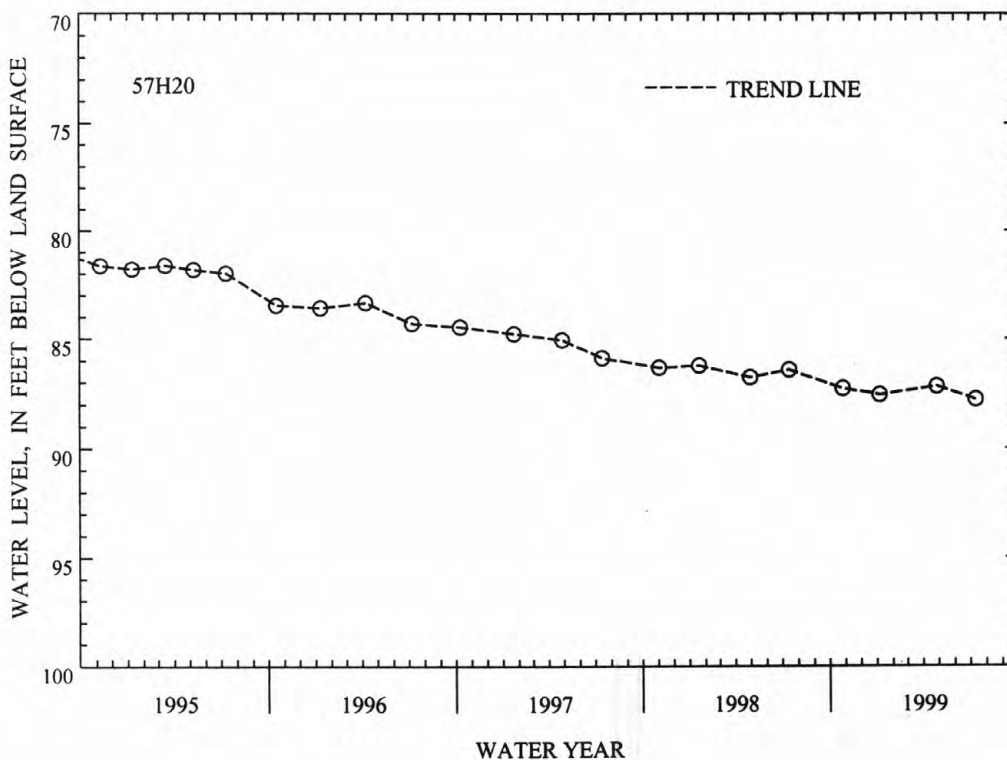
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--June 1994 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 80.59 ft below land-surface datum, June 24, 1994; lowest measured, 87.74 ft below land-surface datum, July 12, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 27	87.24	JAN 07	87.52	APR 28	87.14	JUL 12	87.74
WATER YEAR 1999		HIGHEST	87.14	APR 28, 1999			
		LOWEST	87.74	JUL 12, 1999			



GROUND-WATER LEVELS

GLOUCESTER COUNTY

372621076404202. Local number, 57H 21 SOW 192B.

LOCATION.--Lat 37°26'21", long 76°40'42", Hydrologic Unit 02080107, 80 ft north of State Highway 684 (Starvation Road), 1.1 mi northeast of intersection of State Highways 617 and 684. Owner: St. Laurent Paper Products Corporation (formerly Chesapeake Corporation).

AQUIFER.--Upper Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in. 200 ft, diameter 2 in. 200 to 480 ft, depth 480 ft, screened 470 to 480 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 6 ft above sea level, from topographic map. Measuring point: Top of inner casing, 1.6 ft above land-surface datum.

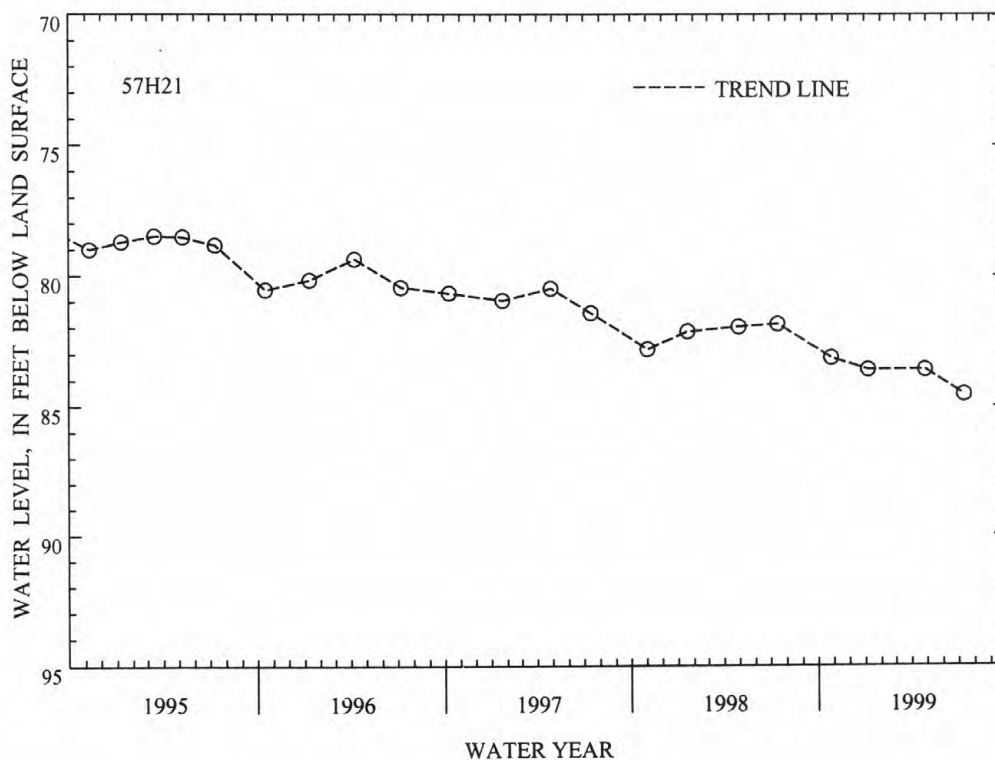
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--June 1994 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 77.63 ft below land-surface datum, June 24, 1994; lowest measured, 84.54 ft below land-surface datum, July 12, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 27	83.13	JAN 07	83.58	APR 28	83.58	JUL 12	84.54
WATER YEAR 1999	HIGHEST	83.13	OCT 27, 1998				
	LOWEST	84.54	JUL 12, 1999				



GROUND-WATER LEVELS

GLOUCESTER COUNTY

372621076404203. Local number, 57H 22 SOW 192C.

LOCATION.--Lat 37°26'21", long 76°40'42", Hydrologic Unit 02080107, 80 ft north of State Highway 684 (Starvation Road), 1.1 mi northeast of intersection of State Highways 617 and 684. Owner: St. Laurent Paper Products Corporation (formerly Chesapeake Corporation).

AQUIFER.--Aquia aquifer of Pleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in. 200 ft, diameter 2 in. 200 to 370 ft, depth 370 ft, screened 350 to 370 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 6 ft above sea level, from topographic map. Measuring point: Top of inner casing, 1.7 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

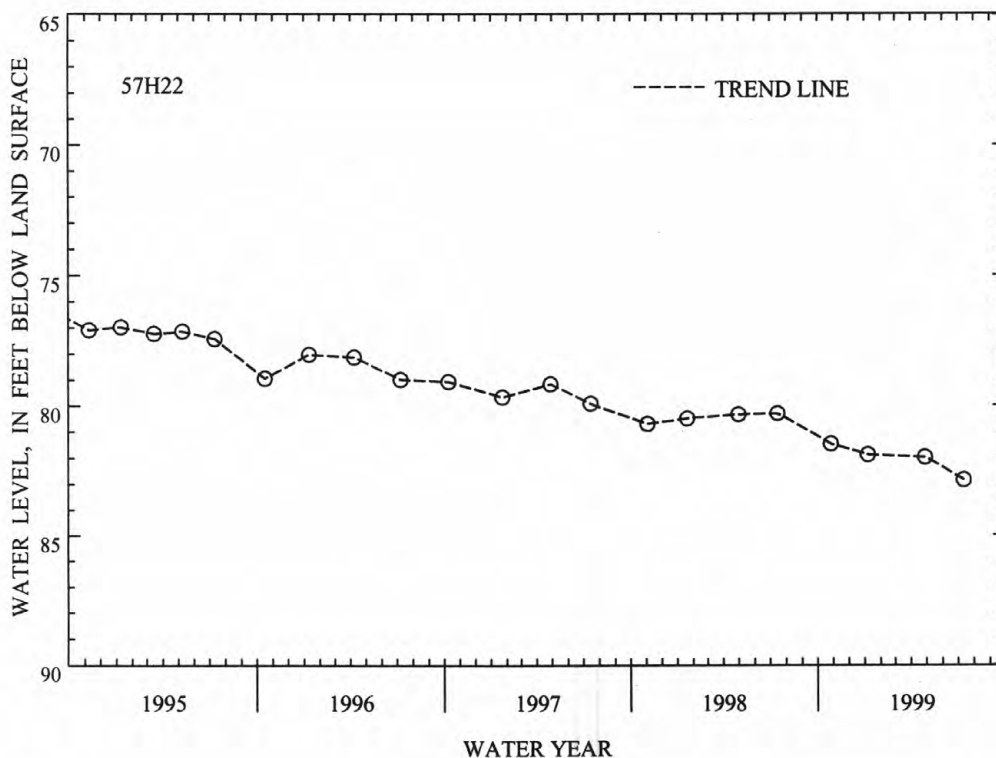
PERIOD OF RECORD.--June 1994 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 75.78 ft below land-surface datum, June 24, 1994; lowest measured, 82.86 ft below land-surface datum, July 12, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 27	81.48	JAN 07	81.89	APR 28	81.99	JUL 12	82.86

WATER YEAR 1999	HIGHEST	81.48	OCT 27, 1998
LOWEST	82.86	JUL 12, 1999	



GROUND-WATER LEVELS

GLOUCESTER COUNTY

372331076312602. Local number, 58H 7 SOW 168B.

LOCATION.--Lat 37°23'31", long 76°31'26", Hydrologic Unit 02080102, at entrance to Gloucester County landfill, 0.3 mi east of U.S. Highway 17, and 1.4 mi south of Gloucester. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in. to 186 ft, diameter 2 in. from 186 to 960 ft, depth 960 ft, screened 950 to 960 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 7, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 75 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.

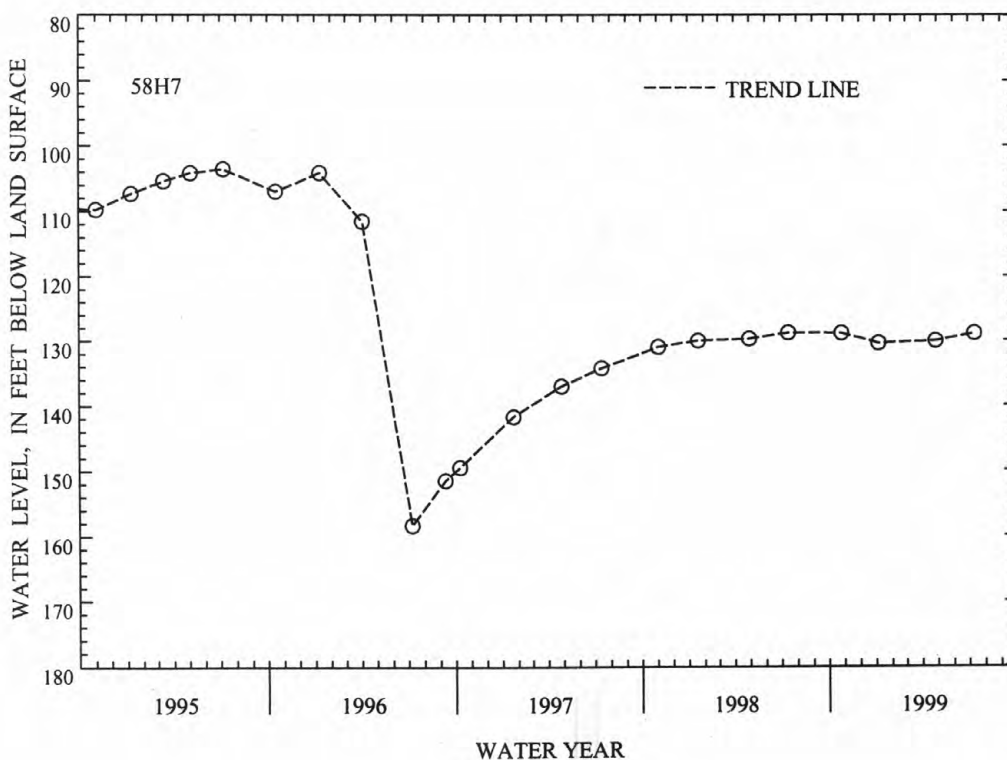
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown. Low water level in June 1996 is the result of the well being pumped for water-quality sampling.

PERIOD OF RECORD.--June 1985 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 33.55 ft below land-surface datum, Nov. 20, 1985; lowest measured, 158.32 ft below land-surface datum, July 8, 1996.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 27	128.83	JAN 07	130.40	APR 28	130.04	JUL 12	128.88
WATER YEAR 1999	HIGHEST	128.83	OCT 27, 1998				
	LOWEST	130.40	JAN 07, 1999				



GROUND-WATER LEVELS

GLOUCESTER COUNTY

372331076312604. Local number, 58H 8 SOW 168C.

LOCATION.--Lat 37°23'31", long 76°31'26", Hydrologic Unit 02080102, at entrance to Gloucester County landfill, 0.3 mi east of U.S. Highway 17, and 1.4 mi south of Gloucester. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 40 ft, screened 30 to 40 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 7, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 75 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.

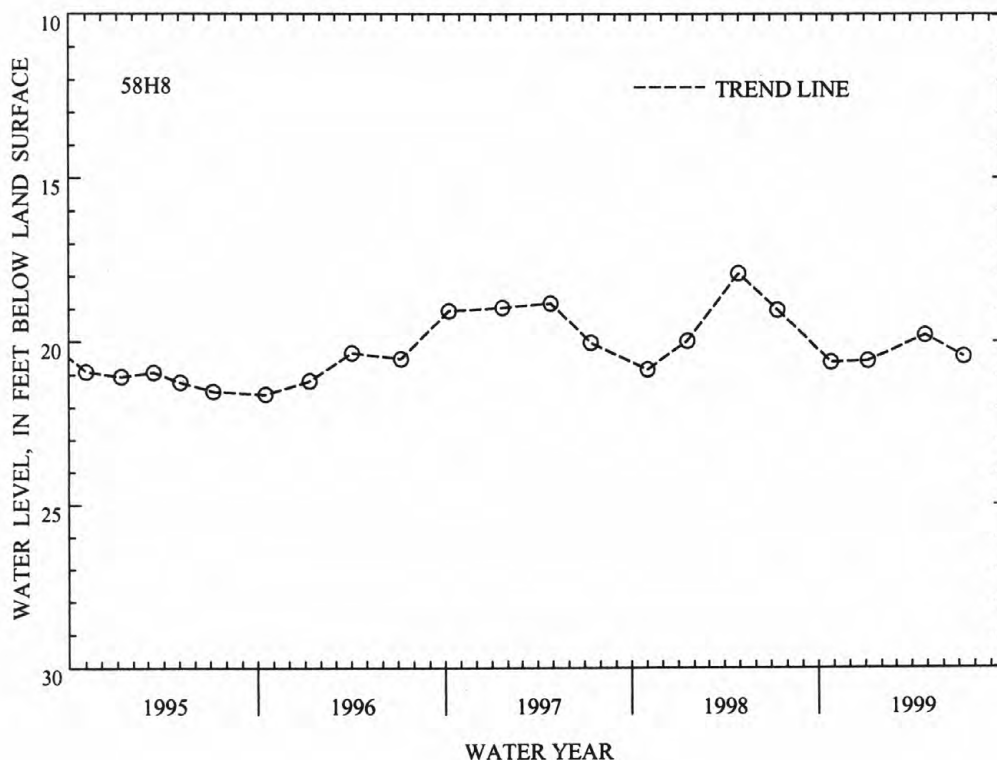
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--June 1985 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 17.00 ft below land-surface datum, Apr. 20, 1993; lowest measured, 21.81 ft below land-surface datum, Sept. 23, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 27	20.61	JAN 07	20.57	APR 28	19.79	JUL 12	20.43
WATER YEAR 1999	HIGHEST	19.79	APR 28, 1999				
	LOWEST	20.61	OCT 27, 1998				



GROUND-WATER LEVELS

HANOVER COUNTY

375316077274701. Local number, 51M 11.

LOCATION.--Lat 37°53'16", long 77°27'47", Hydrologic Unit 02080106, 900 ft east of U.S. Highway 1 on a private dirt road at the North Anna River and 9.9 mi north of Ashland on U.S. Highway 1. Owner: Weyerhaeuser Inc.

AQUIFER.--Newark Supergroup of late Triassic age.

WELL CHARACTERISTICS.--Drilled water well, diameter 6 in., depth 175 ft, cased to 20 ft, open hole 20 to 175 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

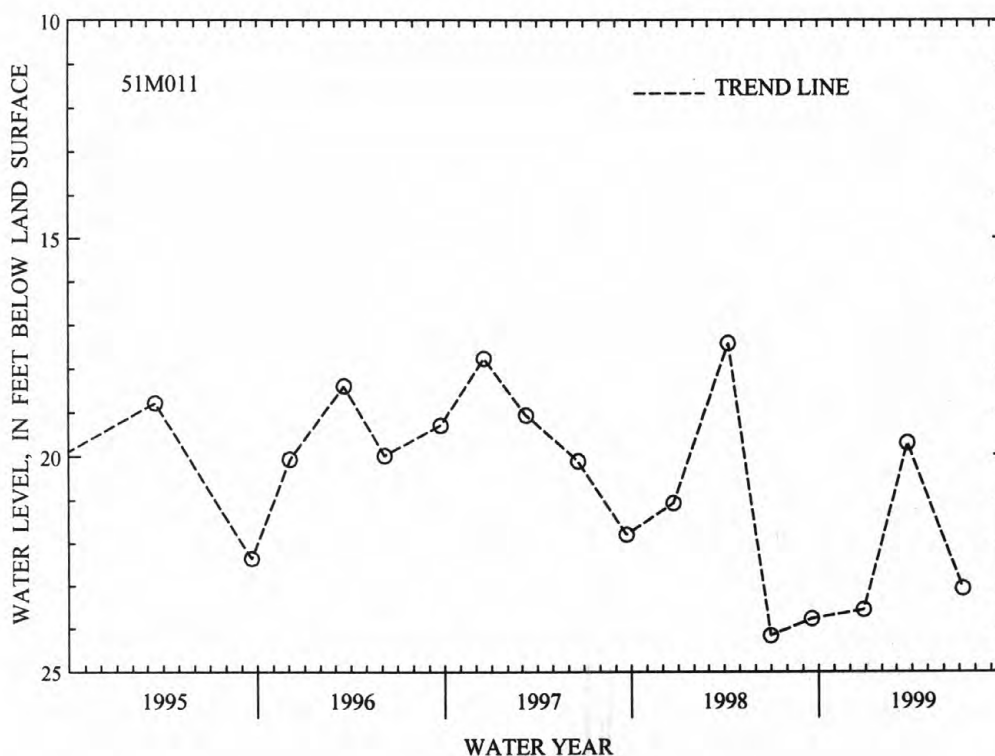
DATUM.--Elevation of land-surface datum is 70 ft above sea level, from topographic map. Measuring point: Top of casing, at land-surface datum.

PERIOD OF RECORD.--January 1984 to current year. Unpublished records available prior to October 1987 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.17 ft below land-surface datum, Mar. 30, 1993; lowest measured, 24.17 ft below land-surface datum, June 30, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
	DEC 28	23.57	MAR 24	19.72	JUL 08	23.08
WATER YEAR 1999	HIGHEST	19.72	MAR 24, 1999			
	LOWEST	23.57	DEC 28, 1998			



GROUND-WATER LEVELS

HANOVER COUNTY

373507077171201. Local number, 52J 10.

LOCATION.--Lat 37°35'07", long 77°17'12", Hydrologic Unit 02080206, 150 ft north of State Highway 156 at the Cold Harbor Visitor Center, 1.0 mi southwest of the intersection of State Highways 156 and 619, and 4.9 mi east of Mechanicsville. Owner: U.S. National Park Service.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled water well, diameter 6 in., depth 270 ft, screened 255 to 270 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 172 ft above sea level, from topographic map. Measuring point: Top of casing, 1.55 ft above land-surface datum.

REMARKS.--Water level affected by regional drawdown.

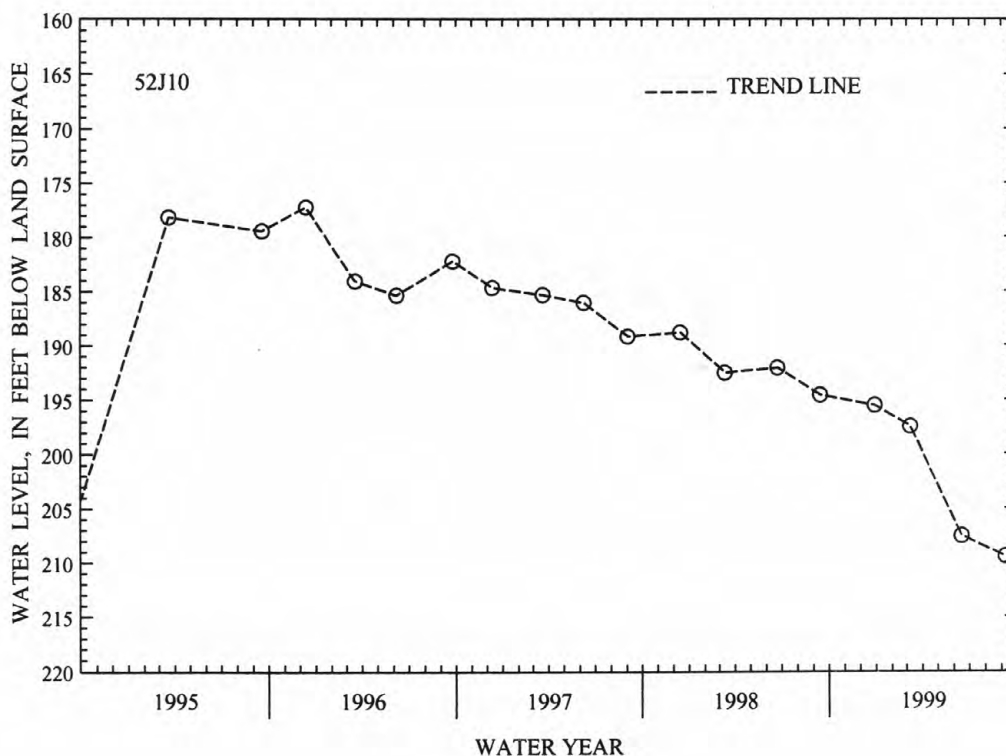
PERIOD OF RECORD.--December 1972, October 1983 to current year. Unpublished records available prior to October 1987 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 165.75 ft below land-surface datum, Dec. 1, 1972; lowest measured, 209.44 ft below land-surface datum, Sept. 9, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 29	195.50	MAR 08	197.44	JUN 16	207.55	SEP 09	209.44

WATER YEAR 1999	HIGHEST	195.50	DEC 29, 1998
	LOWEST	209.44	SEP 09, 1999



GROUND-WATER LEVELS

HANOVER COUNTY

374508077213101. Local number, 52L 9.

LOCATION.--Lat 37°45'08", long 77°21'31", Hydrologic Unit 02080106, at Hanover County recreational facility, 800 ft east of U.S. Highway 301, 1 mi. south of Hanover Courthouse. Owner: Hanover County Parks and Recreation.

AQUIFER.--Aquia aquifer of Paleocene age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 4.5 in., depth 160.48 ft, screened 140.48 ft to 160.48 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to October 1998, monthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 115 ft above sea level. Measuring point: Top of casing, 2.70 ft above land-surface datum.

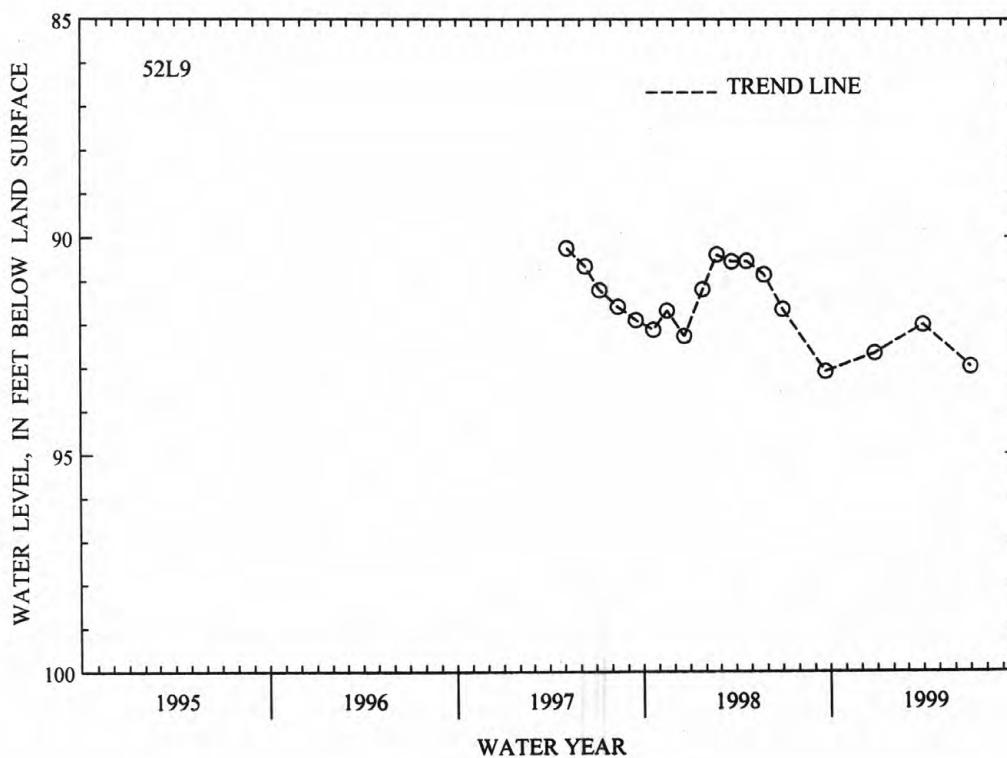
REMARKS.--Backup supply well. Water levels measured as part of Fall Zone ground-water study.

PERIOD OF RECORD.--May 1997 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 90.24 ft below land-surface datum, May 6, 1997; lowest measured, 93.09 ft below land-surface datum, Sept. 23, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
	DEC 28	92.67	APR 01	92.01	JUL 02	92.98
WATER YEAR 1999	HIGHEST	92.01	APR 01, 1999			
	LOWEST	92.98	JUL 02, 1999			



GROUND-WATER LEVELS

HANOVER COUNTY

373737077083201. Local number, 53K 19 SOW 080.

LOCATION.--Lat 37°37'37", long 77°08'32", Hydrologic Unit 02080106, 500 ft northeast of State Highway 606, 0.15 mi west of intersection of State Highways 606 and 629, and 4.6 mi east of Old Church. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Dug unused water well, diameter 30 in., depth 35 ft, cased to 35 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 3, 1985 to July 11, 1995, bimonthly measurement with chalked tape. May 20, 1978, to Oct. 2, 1985, occasional measurement with chalked tape. Prior to May 20, 1978, continuous strip-chart recorder.

DATUM.--Elevation of land-surface datum is 130 ft above sea level, from topographic map. Measuring point: Top of casing, 0.85 ft above land-surface datum.

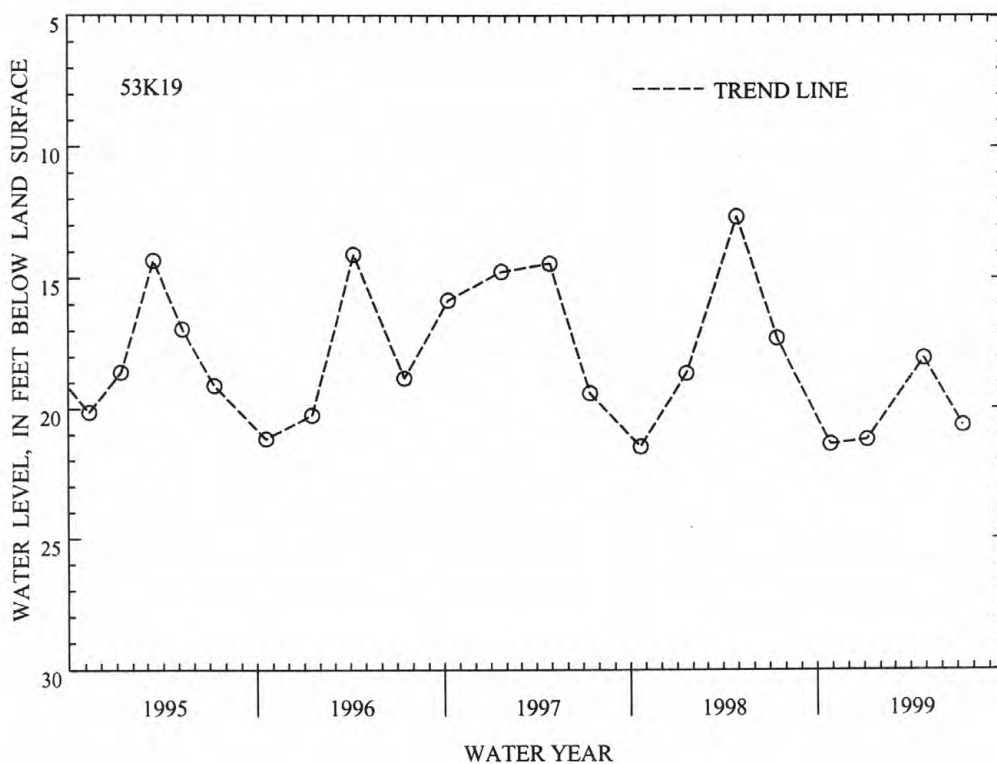
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--January 1978 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.05 ft below land-surface datum, Jan. 25, 1978; lowest measured, 22.85 ft below land-surface datum, Aug. 3, 1984.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	21.38	JAN 07	21.21	APR 28	18.05	JUL 12	20.65
WATER YEAR 1999	HIGHEST	18.05	APR 28, 1999				
	LOWEST	21.38	OCT 28, 1998				



GROUND-WATER LEVELS

HENRICO COUNTY

373607077331401. Local number, 50J 1 SOW 023.

LOCATION.--Lat 37°36'07", long 77°33'14", Hydrologic Unit 02080205, 200 ft north of Three Chopt Road, 1.0 mi south-east of intersection of Three Chopt Road and Parham Road in Richmond. Owner: E. L. Gilman.

AQUIFER.--Petersburg Granite of Mississippian age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 10 in., depth 300 ft, cased to 68 ft, open hole 68 to 300 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 17, 1995, bimonthly measurement with chalked tape. June 5, 1974, to Sept. 30, 1985, occasional measurement with chalked tape. Prior to June 5, 1974, continuous strip-chart recorder.

DATUM.--Elevation of land-surface datum is 275 ft above sea level, from topographic map. Measuring point: Top of casing, 1.88 ft above land-surface datum.

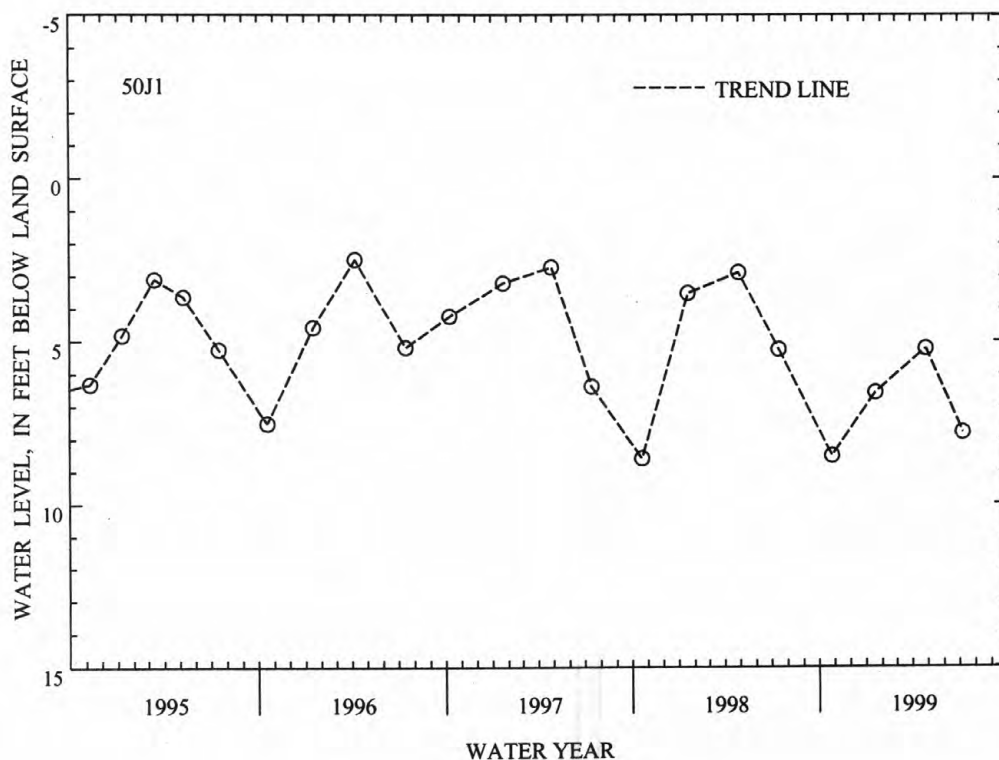
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--May 1969 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.48 ft below land-surface datum, June 5, 1970; lowest recorded, 10.43 ft below land-surface datum, Jan. 5, 1971.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 27	8.51	JAN 20	6.57	APR 28	5.22	JUL 08	7.79
WATER YEAR 1999		HIGHEST	5.22	APR 28, 1999			
		LOWEST	8.51	OCT 27, 1998			



GROUND-WATER LEVELS

HENRICO COUNTY

373428077233001. Local number, 51J 13.

LOCATION.--Lat 37°34'28", long 77°23'30", Hydrologic Unit 02080206, 1,600 ft east of the intersection of U.S. Highway 360 (Mechanicsville Turnpike) and Laburnum Avenue and 500 ft south of Laburnum Avenue at water tower. Owner: Henrico County.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 8 in. to 167 ft, diameter 6 in. from 167 to 275 ft, depth 275 ft, screened 167 to 186 ft, 213 to 226 ft, 248 to 258 ft.

INSTRUMENTATION.--Weekly measurements by Henrico County personnel and occasional measurements with chalked tape by USGS personnel. Prior to Apr. 2, 1992, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 168 ft above sea level, from topographic map. Measuring point: Top of casing, 1.7 ft above land-surface datum prior to Apr. 8, 1992; 0.2 ft thereafter.

REMARKS.--Water level affected by regional decline and local pumpage.

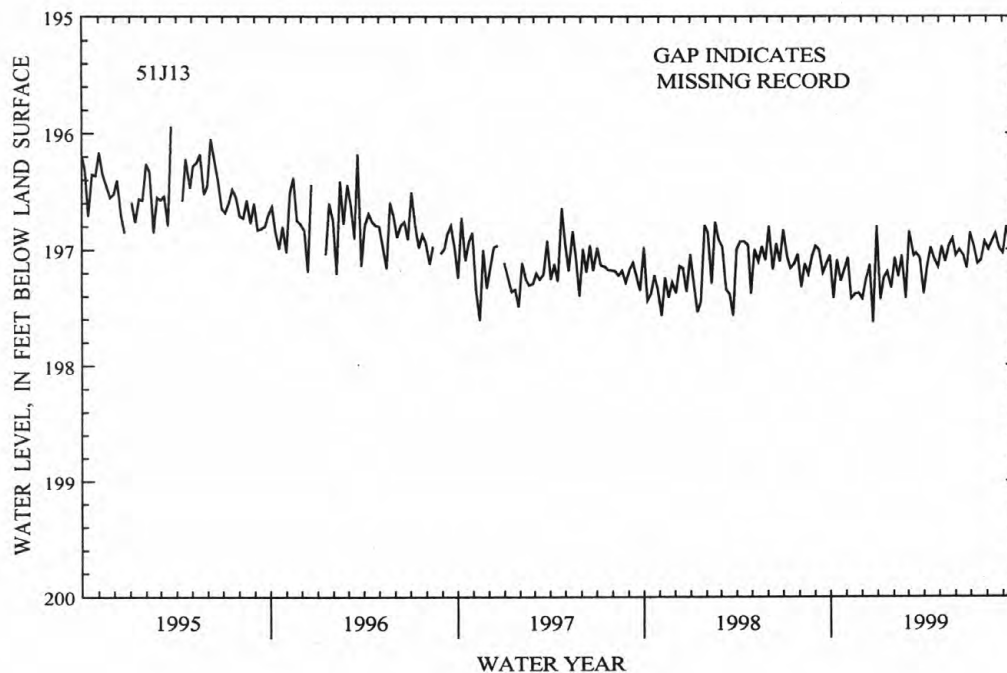
PERIOD OF RECORD.--January 1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 190.85 ft below land-surface datum, Apr. 7, 1988; lowest measured, 197.63 ft below land-surface datum, Dec. 23, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 07	197.42	DEC 09	197.26	FEB 10	197.23	APR 14	196.98	JUN 16	197.04	AUG 25	196.98
14	197.09	16	197.13	17	197.05	21	197.08	23	197.16	SEP 01	197.03
21	197.27	23	197.63	24	197.42	28	197.15	30	196.85	08	196.80
28	197.15	30	197.80	MAR 03	196.84	MAY 05	196.97	JUL 07	196.97	15	196.92
NOV 04	197.07	JAN 06	197.43	12	197.05	12	197.10	14	196.12	22	196.75
10	197.42	13	197.24	17	196.03	19	196.97	21	197.09	29	197.00
18	197.38	20	197.19	24	197.07	26	196.90	28	196.93		
25	197.37	27	197.33	31	197.38	JUN 02	197.05	AUG 04	197.00		
DEC 02	197.42	FEB 03	197.07	APR 07	197.14	09	197.00	18	196.86		

WATER YEAR 1999
HIGHEST 196.75 SEP 22, 1999
LOWEST 197.63 DEC 23, 1998



GROUND-WATER LEVELS

HENRICO COUNTY

373817077282501. Local number, 51K 4 SOW 137.

LOCATION.--Lat 37°38'17", long 77°28'25", Hydrologic Unit 02080206, 50 ft east of entrance to J. Sargeant Reynolds Community College, 0.9 mi west of intersection of Parham Road and U.S. Highway 1, and 0.9 mi west of Yellow Tavern. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Petersburg Granite of Mississippian age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in., depth 280 ft, cased to 35 ft, open hole 35 to 280 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 30, 1985, to July 17, 1995, bimonthly measurement with chalked tape. Prior to Sept. 30, 1985, monthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 180 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum prior to Sept. 9, 1980; 1.5 ft thereafter.

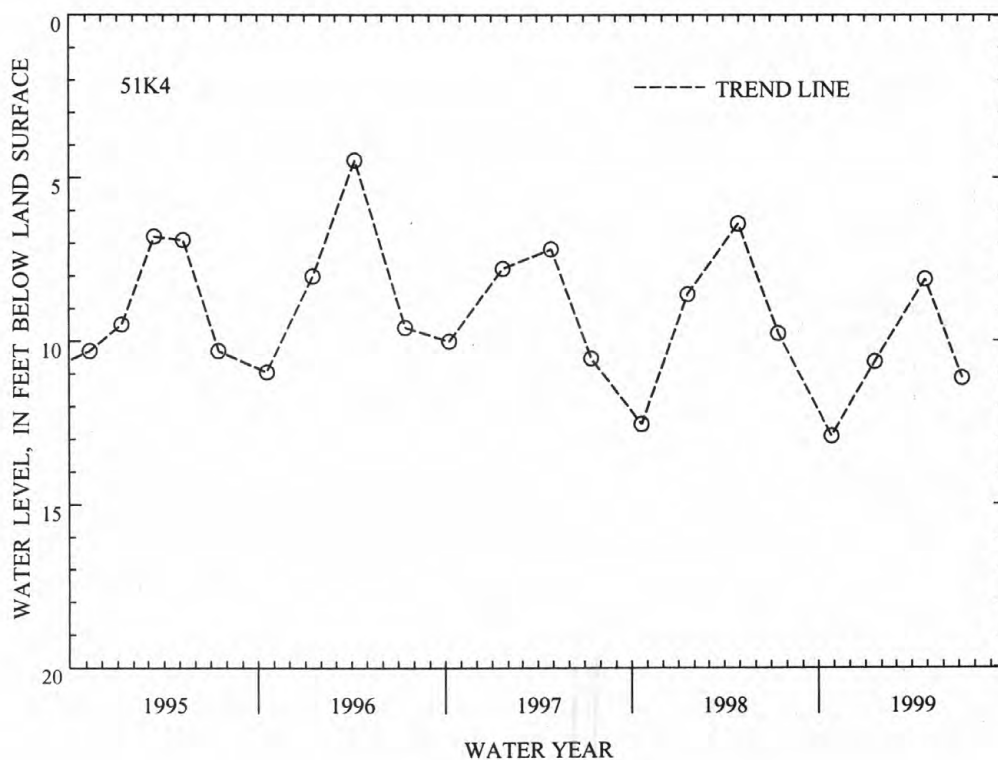
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--April 1980 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.37 ft below land-surface datum, Apr. 30, 1987; lowest measured, 12.91 ft below land-surface datum, Oct. 27, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 27	12.91	JAN 20	10.63	APR 28	8.10	JUL 08	11.13
WATER YEAR 1999	HIGHEST	8.10	APR 28, 1999				
	LOWEST	12.91	OCT 27, 1998				



GROUND-WATER LEVELS

HENRICO COUNTY

372936077211101. Local number, 52H 3 SOW 136.

LOCATION.--Lat 37°29'36", long 77°21'11", Hydrologic Unit 02080206, 100 ft west of Laburnum Avenue, 0.9 mi north of intersection of Laburnum Avenue and Darbytown Road, and 2.4 mi southwest of Sandston. Owner: Nabisco Incorporated.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in., depth 209 ft, screened 149 to 159 ft, 199 to 209 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Mar. 25, 1985, to July 17, 1995, bimonthly measurement with chalked tape. Prior to Mar. 25, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 150 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum.

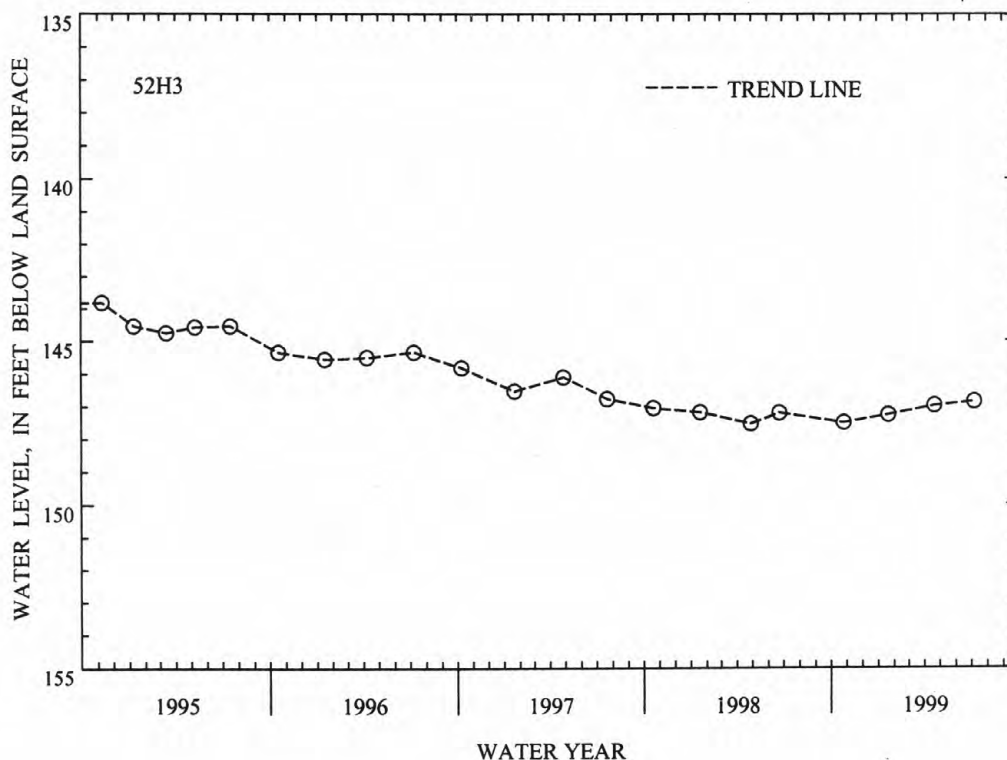
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

PERIOD OF RECORD.--December 1974 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 131.42 ft below land-surface datum, Dec. 2, 1974; lowest measured, 147.53 ft below land-surface datum, Apr. 29, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 27	147.50	JAN 22	147.26	APR 22	146.98	JUL 08	146.86
WATER YEAR 1999	HIGHEST	146.86	JUL 08, 1999				
	LOWEST	147.50	OCT 27, 1998				



GROUND-WATER LEVELS

HENRICO COUNTY

372538077221501. Local number, 52H 16.

LOCATION.--Lat 37°25'38", long 77°22'15", Hydrologic Unit 02080206, at Richmond National Battlefields Park - Fort Harrison Unit, 800 ft east of visitors center. Owner: U.S. Geological Survey.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 2 in., depth 34.25 ft, screened 24.25 ft to 34.25 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Unpublished digital recorder data November 13, 1995, to May 8, 1996.

DATUM.--Elevation of land-surface datum is 135 ft above sea level. Measuring point: Top of casing, 1.43 ft above land-surface datum.

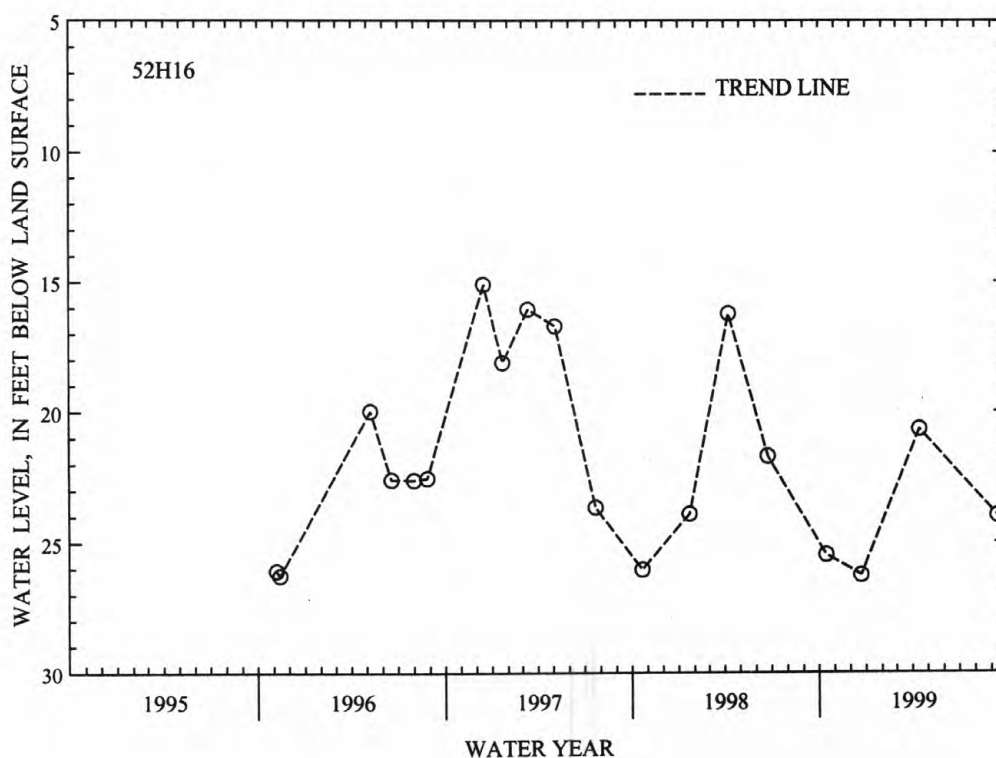
REMARKS.--Well drilled as part of Fall Zone ground-water study.

PERIOD OF RECORD.--November 1995 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.08 ft below land-surface datum, Dec. 16, 1996; lowest measured, 26.27 ft below land-surface datum, Nov. 13, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	25.48	DEC 22	26.26	APR 15	20.67	JUL 13	23.99
WATER YEAR 1999	HIGHEST	20.67	APR 15, 1999				
	LOWEST	26.26	DEC 22, 1998				



GROUND-WATER LEVELS

HENRICO COUNTY

372538077221502. Local number, 52H 17.

LOCATION.--Lat 37°25'38", long 77°22'15", Hydrologic Unit 02080206, at Richmond National Battlefields Park - Fort Harrison Unit, 800 ft east of visitors center. Owner: U.S. Geological Survey.

AQUIFER.--Aquia aquifer of Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 2 in., depth 78.90 ft, screened 73.90 ft to 78.90 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Unpublished digital recorder data April 3, 1996, to May 8, 1996.

DATUM.--Elevation of land-surface datum is 135 ft above sea level. Measuring point: Top of casing, 1.50 ft above land-surface datum.

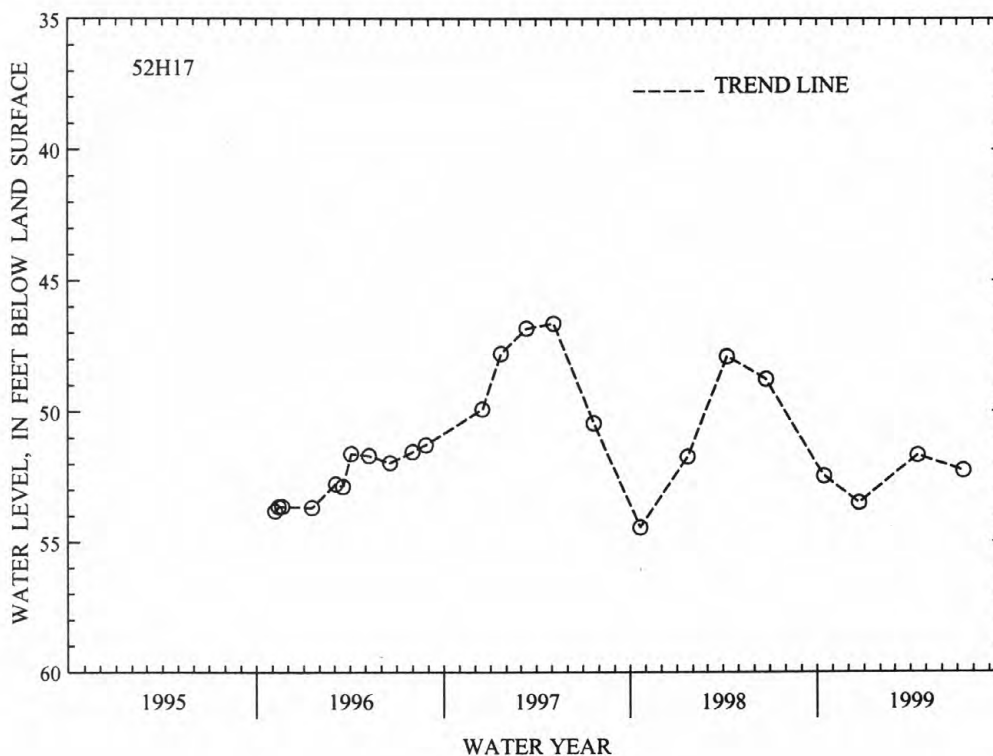
REMARKS.--Well drilled as part of Fall Zone ground-water study.

PERIOD OF RECORD.--November 1995 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 46.63 ft below land-surface datum, May 5, 1997; lowest measured, 54.44 ft below land-surface datum, Oct. 21 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	52.47	DEC 22	53.50	APR 15	51.67	JUL 13	52.27
WATER YEAR 1999		HIGHEST	51.67	APR 15, 1999			
		LOWEST	53.50	DEC 22, 1998			



GROUND-WATER LEVELS

HENRICO COUNTY

373301077194001. Local number, 52J 1.

LOCATION.--Lat 37°33'01", long 77°19'40", Hydrologic Unit 02080206, at the intersection of Daisy and Vine Streets, at water tower in Highland Springs. Owner: Henrico County.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 10 in. to 212 ft, diameter 6 in. from 212 to 306 ft, depth 306 ft, screened 212 to 306 ft.

INSTRUMENTATION.--Weekly measurements by Henrico County personnel and occasional measurements with chalked tape by USGS personnel. Prior to Apr. 2, 1992, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 172 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum.

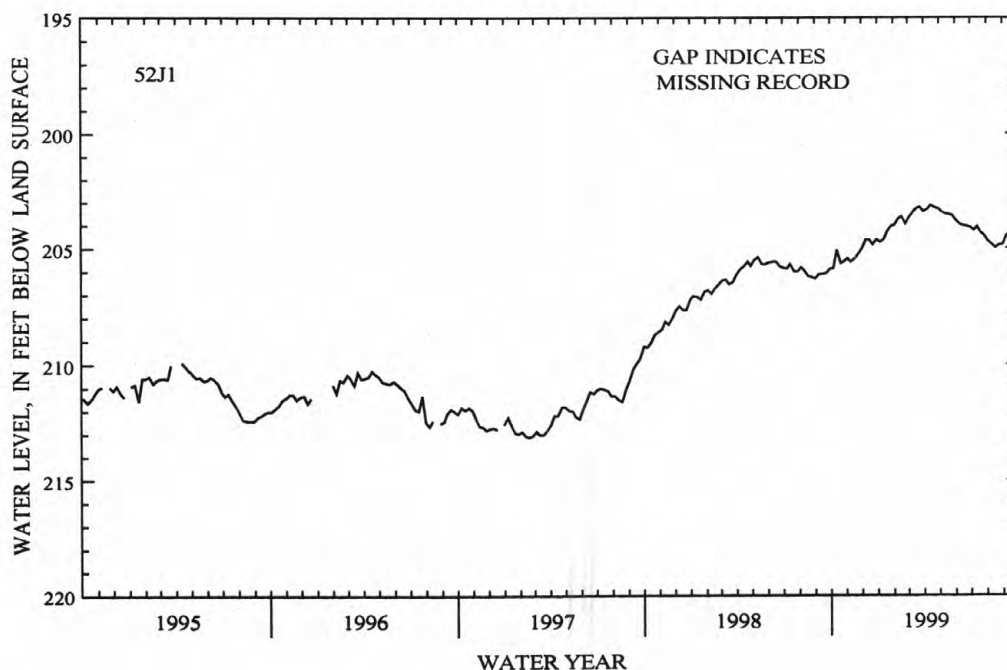
REMARKS.--Water level affected by local pumpage and regional drawdown.

PERIOD OF RECORD.--January 1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 197.64 ft below land-surface datum, Jan. 25, 26, 1988; lowest measured, 213.11 ft below land-surface datum, Feb. 19, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 07	205.85	DEC 09	204.63	FEB 10	203.72	APR 14	203.13	JUN 16	204.01	AUG 25	204.85
14	205.70	16	204.63	17	203.60	21	203.22	23	204.04	SEP 01	204.82
21	205.64	23	204.82	24	203.93	28	203.27	30	204.10	08	204.44
28	205.57	30	204.62	MAR 03	203.65	MAY 05	203.41	JUL 07	204.22	15	204.38
NOV 04	205.42	JAN 06	204.73	12	203.40	12	203.49	14	204.07	22	204.05
10	205.58	13	204.62	17	203.29	19	203.50	21	204.33	29	204.18
18	205.42	20	204.27	24	203.21	26	203.57	28	204.45		
25	205.24	27	204.04	31	203.40	JUN 02	203.78	AUG 04	204.70		
DEC 02	204.99	FEB 03	203.98	APR 07	203.32	09	203.94	18	204.98		
WATER YEAR 1999 HIGHEST 203.13 APR 14, 1999											
LOWEST 205.85 OCT 07, 1998											



GROUND-WATER LEVELS

ISLE OF WIGHT COUNTY

364059076544901. Local number, 55B 16.

LOCATION.--Lat 36°40'59", long 76°54'49", Hydrologic Unit 03010202, off U.S. Highways 258 and 58, 200 ft west of the intersection of U.S. Highways 258 and 58 and Lynn Road, and 0.3 mi east of Franklin. Owner: International Paper Company, formerly Union Camp Corporation.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in., depth 305 ft, screened 285 to 305 ft.

INSTRUMENTATION.--Digital recorder--60-minute punch. Prior to May 27, 1988, continuous strip-chart recorder.

DATUM.--Elevation of land-surface datum is 25 ft above sea level, from topographic map. Measuring point: Top of casing, 0.45 ft above land-surface datum.

REMARKS.--Missing record due to recorder malfunction. Highest water level for the 1995 water year may have occurred during this period. Water level affected by local pumpage and regional drawdown.

PERIOD OF RECORD.--June 1960 to current year.

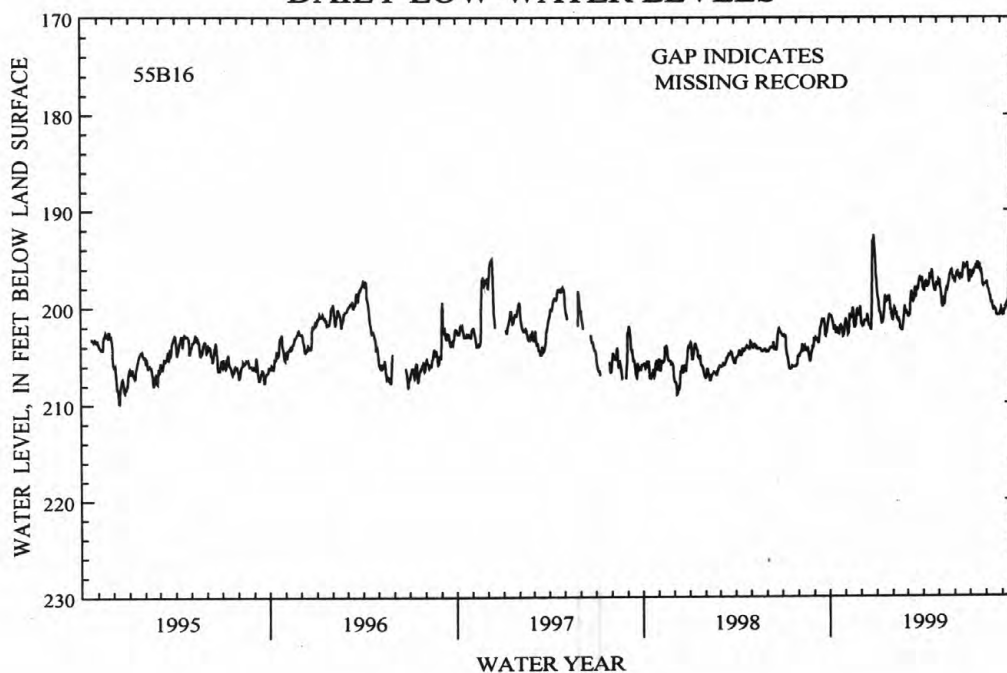
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 99.00 ft below land-surface datum, Dec. 27, 1960; lowest recorded, 216.72 ft below land-surface datum, May 23, 1992.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999 LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	200.86	201.74	201.86	199.06	200.48	200.99	198.32	197.22	196.98	196.84	197.33	200.80
10	202.02	201.77	201.37	200.64	200.48	198.74	197.88	199.95	196.78	196.47	198.78	200.20
15	202.68	200.70	200.72	201.31	201.44	199.17	197.11	199.63	196.88	195.64	199.53	199.32
20	202.77	202.07	201.98	199.48	202.27	199.01	196.13	198.09	195.62	196.16	200.11	182.82
25	201.84	200.34	195.08	198.83	200.56	197.76	198.26	196.58	195.78	196.04	200.89	173.73
EOM	202.58	200.80	195.16	200.64	200.50	197.18	197.83	196.99	196.62	197.71	200.46	170.55

WATER YEAR 1999	HIGHEST INSTANTANEOUS	169.33	SEP 28, 1999
	LOWEST INSTANTANEOUS	202.98	OCT 29, 1998

DAILY LOW-WATER LEVELS



GROUND-WATER LEVELS

ISLE OF WIGHT COUNTY

364125076544801. Local number, 55B 36.

LOCATION.--Lat 36°41'25", long 76°54'48", Hydrologic Unit 03010202, on Lynn Road, 0.45 mi north of intersection with U.S. Highways 258 and 58, and 0.7 mi northeast of Franklin. Owner: International Paper Company, formerly Union Camp Corporation.

AQUIFER.--Lower Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 860 ft, screened 720 to 725 ft, 800 to 805 ft, 855 to 860 ft.

INSTRUMENTATION.--Monthly measurements with chalked tape by USGS personnel. October 1986 to August 1993, continuous strip-chart recorder. September 1983 to October 1986, occasional measurement with chalked tape. October 1982 to September 1983, continuous strip-chart recorder. November 1972 to October 1982, occasional measurement with chalked tape. July 1969 to November 1972, continuous strip-chart recorder. Prior to July 1969, continuous strip-chart recorder and occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 37 ft above sea level, from topographic map. Measuring point: Top of casing, 4.56 ft above land-surface datum.

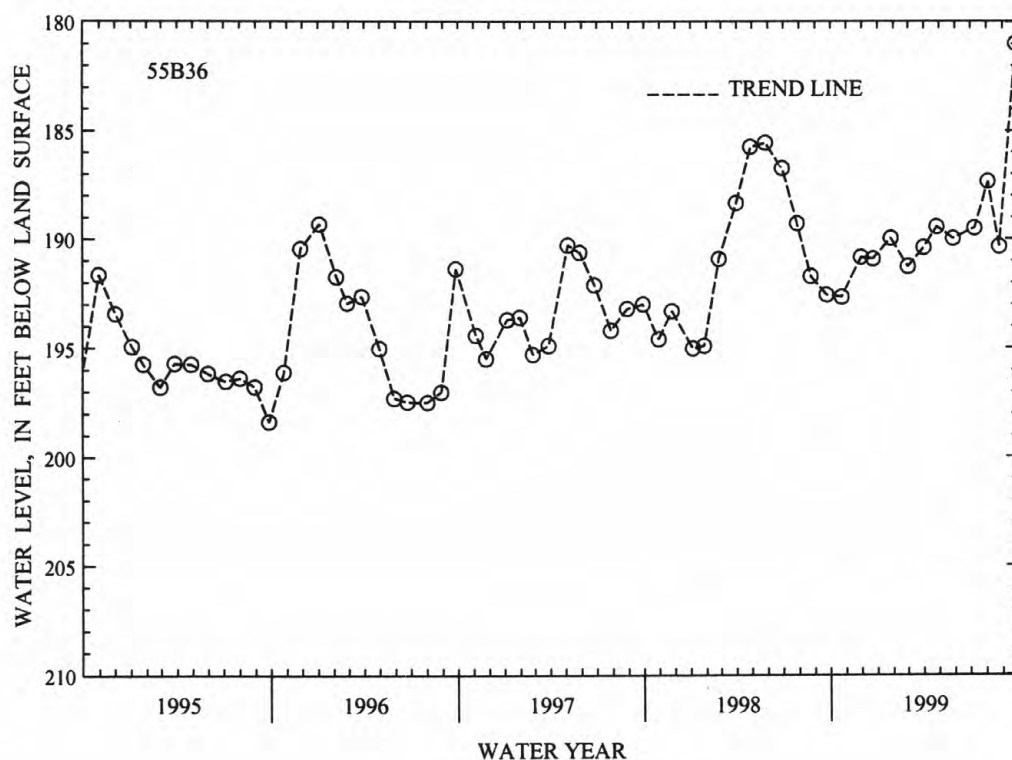
REMARKS.--Water level affected by local pumpage and regional drawdown. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

PERIOD OF RECORD.--March 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 156.65 ft below land-surface datum, Dec. 27, 1969; lowest measured, 219.29 ft below land-surface datum, May 18, 1978.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	192.66	DEC 23	190.91	MAR 01	191.26	APR 26	189.44	JUL 09	189.50	AUG 26	190.34
NOV 30	190.83	JAN 27	189.96	APR 01	190.39	MAY 28	189.98	AUG 04	187.35	SEP 27	180.98
WATER YEAR 1999		HIGHEST	180.98	SEP 27, 1999							
		LOWEST	192.66	OCT 23, 1998							



GROUND-WATER LEVELS

ISLE OF WIGHT COUNTY

364101076544803. Local number, 55B 62 SOW 096B.

LOCATION.--Lat 36°41'01", long 76°54'48", Hydrologic Unit 03010202, 200 ft northwest of intersection of U.S. Highways 58 and 258 and Lynn Road, 0.3 mi east of Franklin. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 3 in., depth 30.77 ft, screened 25 to 30 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to Oct. 8, 1995, digital recorder--60-minute punch. Prior to October 1987, occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 27 ft above sea level, from topographic map. Measuring point: Top of casing, 2.15 ft above land-surface datum.

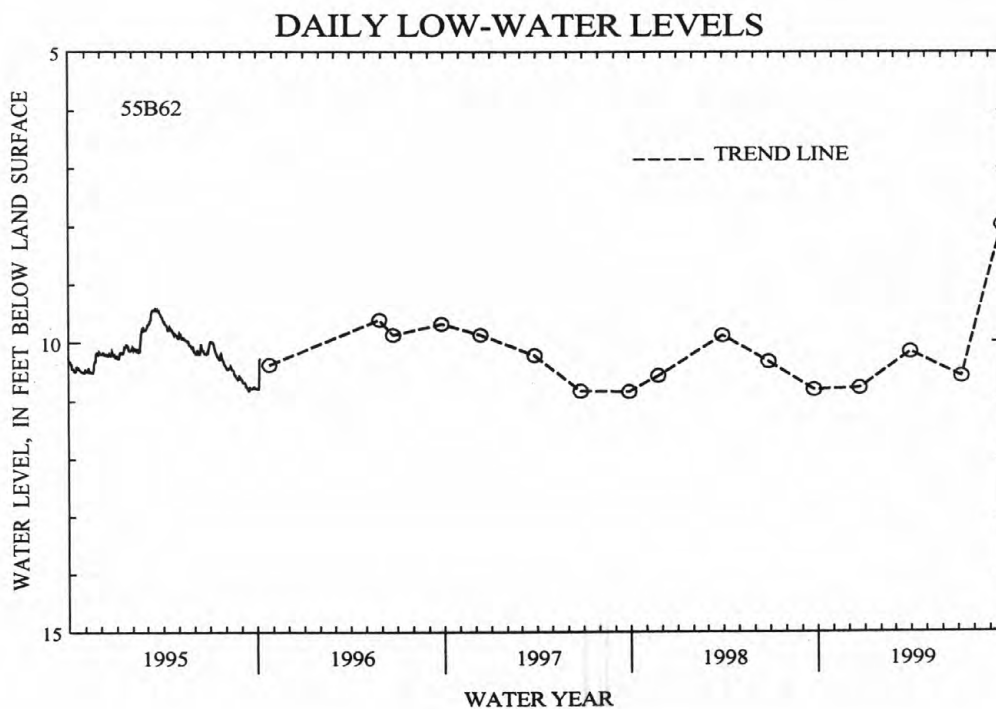
REMARKS.--Low-water level in August 1994 is the result of the well being pumped for water-quality sampling.

PERIOD OF RECORD.--May 1979, October 1980 to September 1981, October 1982 to September 1983, October 1984 to current year. Unpublished records available prior to October 1985 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 7.98 ft below land-surface datum, Sept. 27, 1999; lowest measured, 15.38 ft below land-surface datum, Oct. 17, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 23	10.78	APR 01	10.16	JUL 09	10.58	SEP 27	7.98
WATER YEAR 1999	HIGHEST	7.98	SEP 27, 1999				
	LOWEST	10.78	DEC 23, 1998				



GROUND-WATER LEVELS

ISLE OF WIGHT COUNTY

365305076380001. Local number, 56C 1.

LOCATION.--Lat 36°50'06", long 76°50'03", Hydrologic Unit 03010202, 0.13 mi west of State Highway 614, 2.2 mi south of Zuni. Owner: Zuni Presbyterian Training Center.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled water well, diameter 8 in., depth 434 ft, screened 418 to 434 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 75 ft above sea level, from topographic map. Measuring point: Top of pump base, 1.7 ft above land-surface datum.

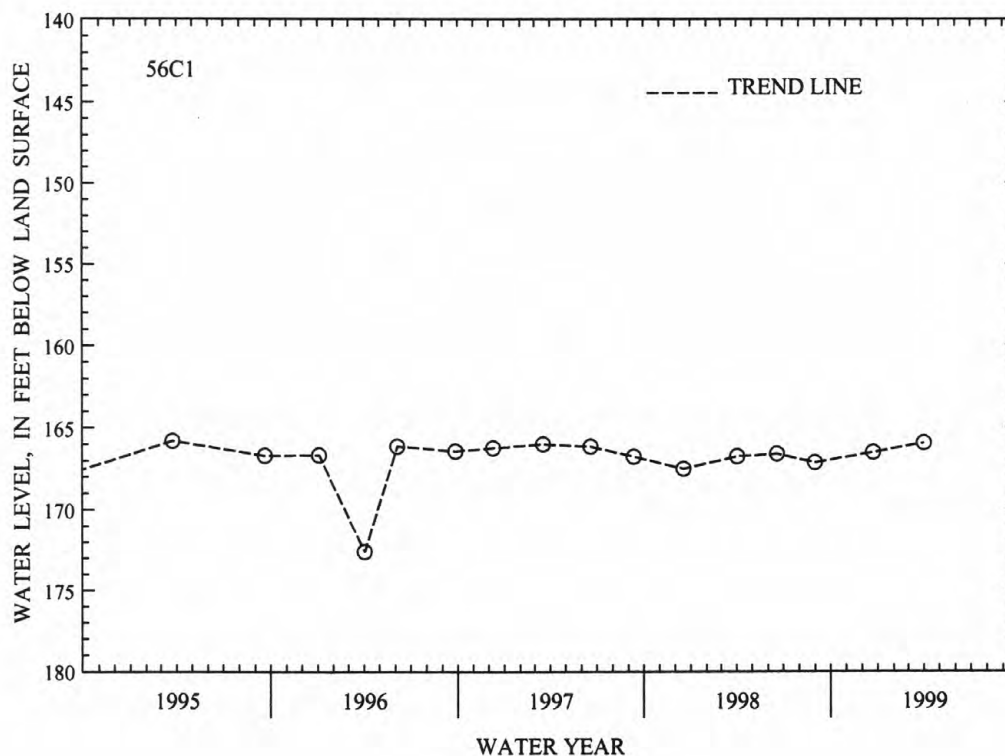
REMARKS.--Water level affected by pumpage and regional drawdown.

PERIOD OF RECORD.--August 1970 to December 1975, January 1978 to April 1999 (discontinued). Unpublished records available prior to October 1985 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 125.02 ft below land-surface datum, Aug. 27, 1970; lowest measured, 172.59 ft below land-surface datum, Apr. 2, 1996 (may have been the result of pumpage).

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

	DATE	WATER LEVEL	DATE	WATER LEVEL
	DEC 23	166.50	APR 01	165.93
WATER YEAR 1999	HIGHEST	165.93	APR 01, 1999	
	LOWEST	166.50	DEC 23, 1998	



GROUND-WATER LEVELS

ISLE OF WIGHT COUNTY

364814076440701. Local number, 57C 25 SOW 149A.

LOCATION.--Lat 36°48'14", long 76°44'07", Hydrologic Unit 02080208, at Windsor Community Center in Windsor.
Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 26 ft, screened 16 to 26 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 19, 1985, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 70 ft above sea level, from topographic map. Measuring point:
Top of casing, 1.2 ft above land-surface datum.

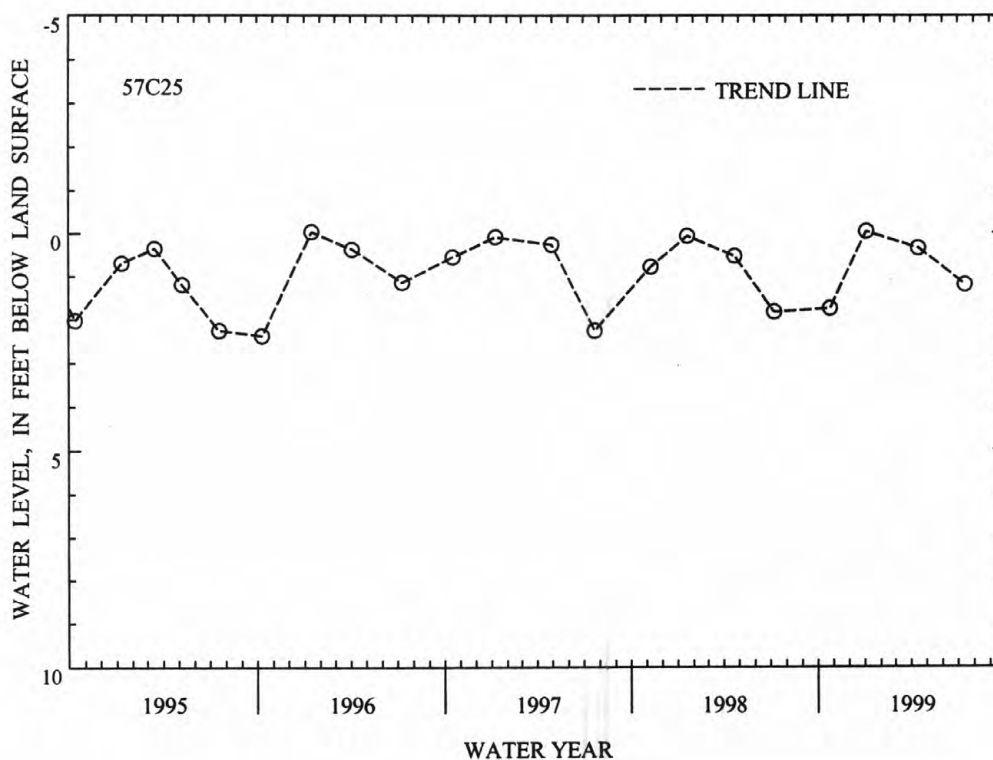
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--March 1985 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.27 ft above land-surface datum, Feb. 23, 1987;
lowest measured, 3.29 ft below land-surface datum, July 22, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	1.75	JAN 05	-0.04	APR 16	0.35	JUL 15	1.20
WATER YEAR 1999	HIGHEST	-0.04	JAN 05, 1999				
	LOWEST	1.75	OCT 26, 1998				



GROUND-WATER LEVELS

ISLE OF WIGHT COUNTY

364814076440702. Local number, 57C 26 SOW 149B.

LOCATION.--Lat 36°48'14", long 76°44'07", Hydrologic Unit 02080208, at Windsor Community Center in Windsor.
Owner: Virginia Department of Environmental Quality.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 380 ft, screened 370 to 380 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 19, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 70 ft above sea level, from topographic map. Measuring point: Top of casing, 1.2 ft above land-surface datum.

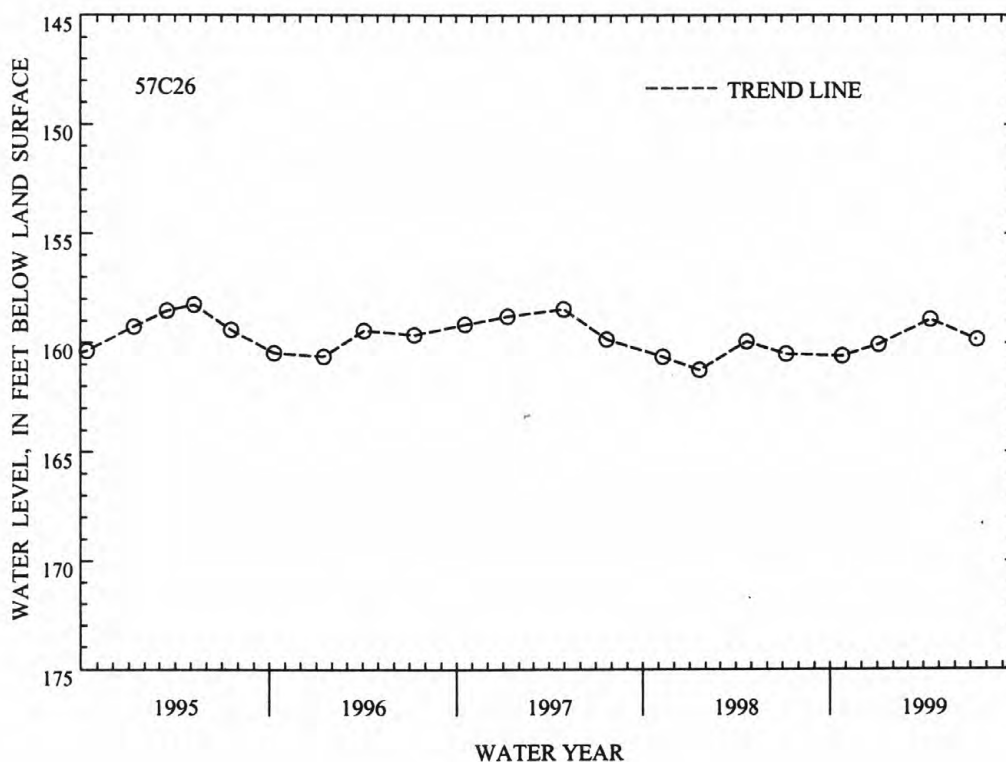
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage and regional drawdown.

PERIOD OF RECORD.--March 1985 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 144.42 ft below land-surface datum, Feb. 25, 1986; lowest measured, 168.14 ft below land-surface datum, Feb. 18, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	160.58	JAN 05	160.05	APR 16	158.90	JUL 15	159.82
WATER YEAR 1999	HIGHEST	158.90	APR 16, 1999				
	LOWEST	160.58	OCT 26, 1998				



GROUND-WATER LEVELS

ISLE OF WIGHT COUNTY

364814076440704. Local number, 57C 28 SOW 149D.

LOCATION.--Lat 36°48'14", long 76°44'07", Hydrologic Unit 02080208, at Windsor Community Center in Windsor.
Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 807 ft, screened 797 to 807 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 19, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 70 ft above sea level, from topographic map. Measuring point: Top of casing, 1.4 ft above land-surface datum.

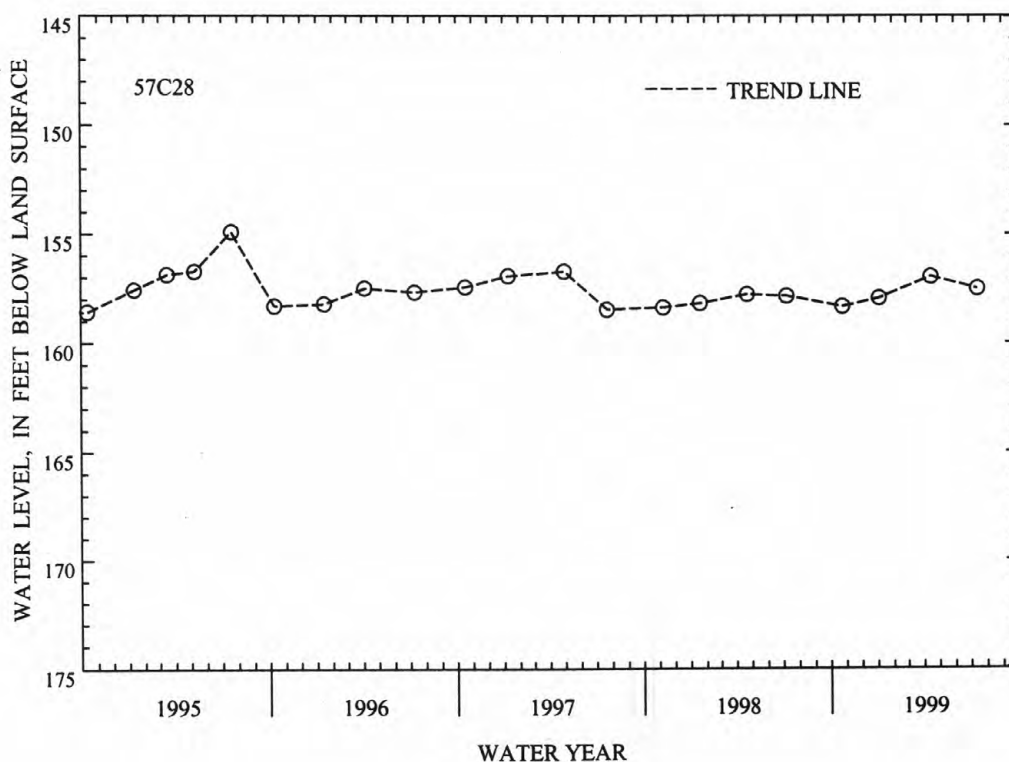
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage and regional drawdown.

PERIOD OF RECORD.--March 1985 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 142.80 ft below land-surface datum, Feb. 25, 1986; lowest measured, 165.62 ft below land-surface datum, Feb. 18, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	158.32	JAN 05	157.94	APR 16	156.95	JUL 15	157.50
WATER YEAR 1999	HIGHEST	156.95	APR 16, 1999				
	LOWEST	158.32	OCT 26, 1998				



GROUND-WATER LEVELS

ISLE OF WIGHT COUNTY

365751076433501. Local number, 57D 21 SOW 143A.

LOCATION.--Lat 36°57'51", long 76°43'35", Hydrologic Unit 03010202, 50 ft west of State Highway 652, 0.5 mi south of State Highway 682, and 1.8 mi southwest of Magnet. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 650 ft, screened 640 to 650 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 7, 1985, to July 10, 1995, bimonthly measurement with chalked tape. Prior to Oct. 7, 1985, monthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 73 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

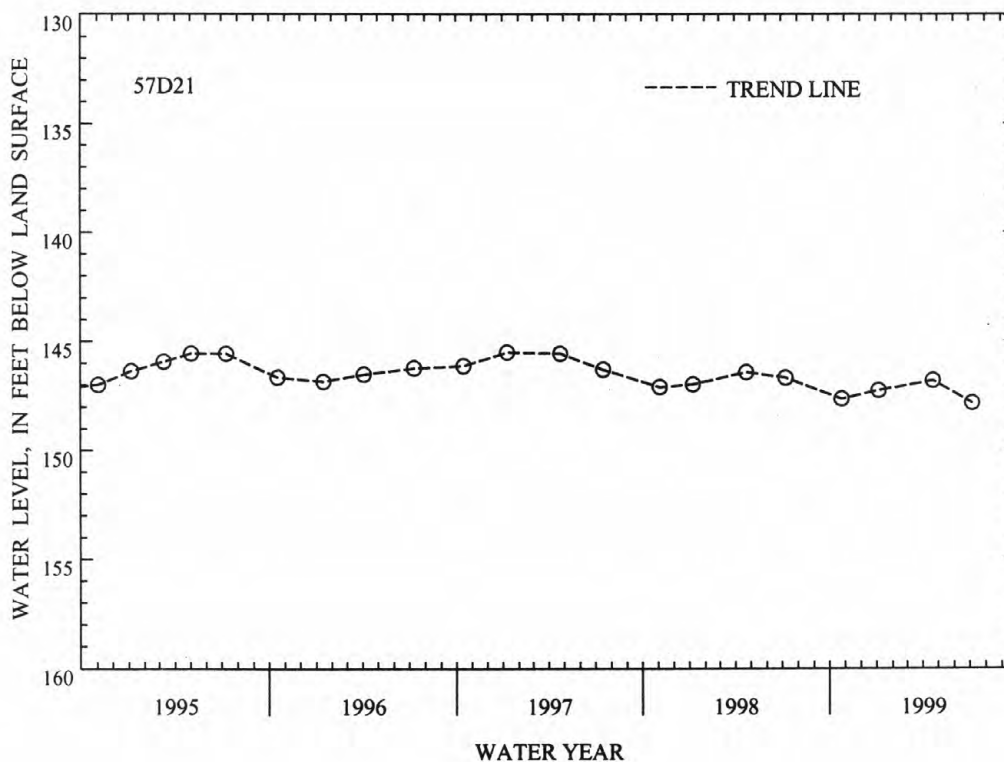
PERIOD OF RECORD.--April 1980 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 122.60 ft below land-surface datum, Aug. 27, 1980; lowest measured, 148.07 ft below land-surface datum, Feb. 18, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	147.64	JAN 06	147.25	APR 22	146.80	JUL 07	147.83

WATER YEAR 1999	HIGHEST	146.80	APR 22, 1999
	LOWEST	147.83	JUL 07, 1999



GROUND-WATER LEVELS

ISLE OF WIGHT COUNTY

365751076433502. Local number, 57D 22 SOW 143B.

LOCATION.--Lat 36°57'51", long 76°43'35", Hydrologic Unit 03010202, 50 ft west of State Highway 652, 0.5 mi south of State Highway 682, and 1.8 mi southwest of Magnet. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 350 ft, screened 340 to 350 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 7, 1985, to July 10, 1995, bimonthly measurement with chalked tape. Prior to Oct. 7, 1985, monthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 73 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum.

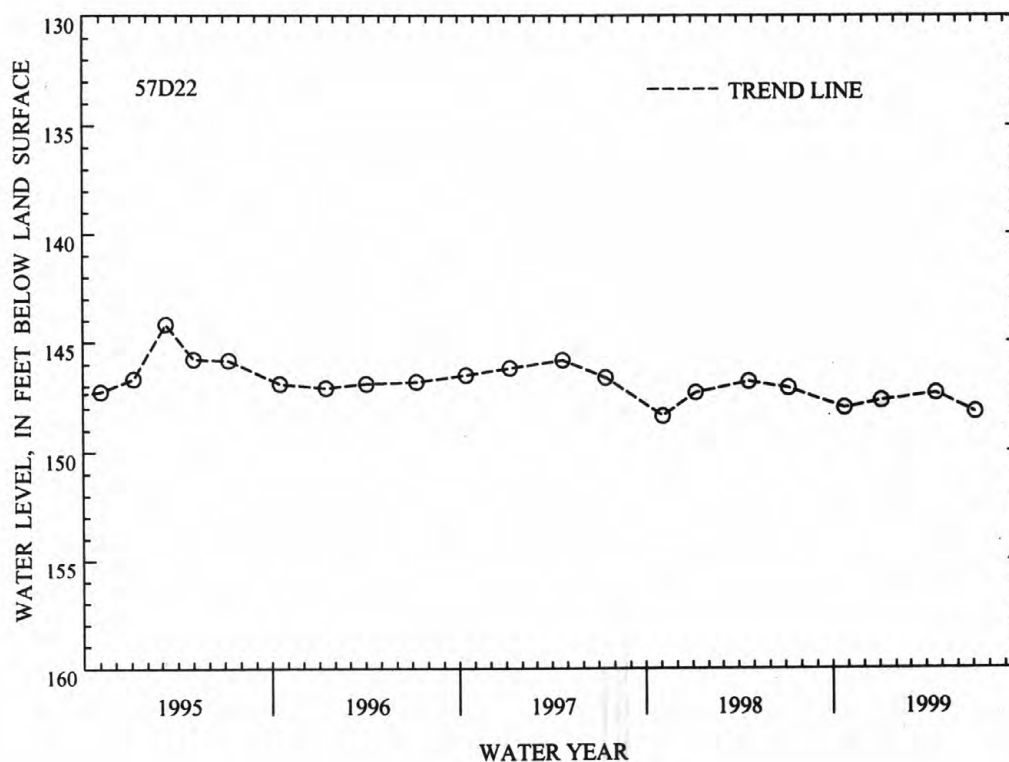
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

PERIOD OF RECORD.--April 1980 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 125.10 ft below land-surface datum, Apr. 24, May 29, 1980; lowest measured, 148.35 ft below land-surface datum, Nov. 5, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	147.99	JAN 06	147.66	APR 22	147.33	JUL 07	148.19
WATER YEAR 1999	HIGHEST	147.33	APR 22, 1999				
	LOWEST	148.19	JUL 07, 1999				



GROUND-WATER LEVELS

ISLE OF WIGHT COUNTY

365751076433503. Local number, 57D 23 SOW 143C.

LOCATION.--Lat 36°57'51", long 76°43'35", Hydrologic Unit 03010202, 50 ft west of State Highway 652, 0.5 mi south of State Highway 682, and 1.8 mi southwest of Magnet. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 18 ft, screened 8 to 18 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 7, 1985, to July 10, 1995, bimonthly measurement with chalked tape. Prior to Oct. 7, 1985, monthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 73 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum.

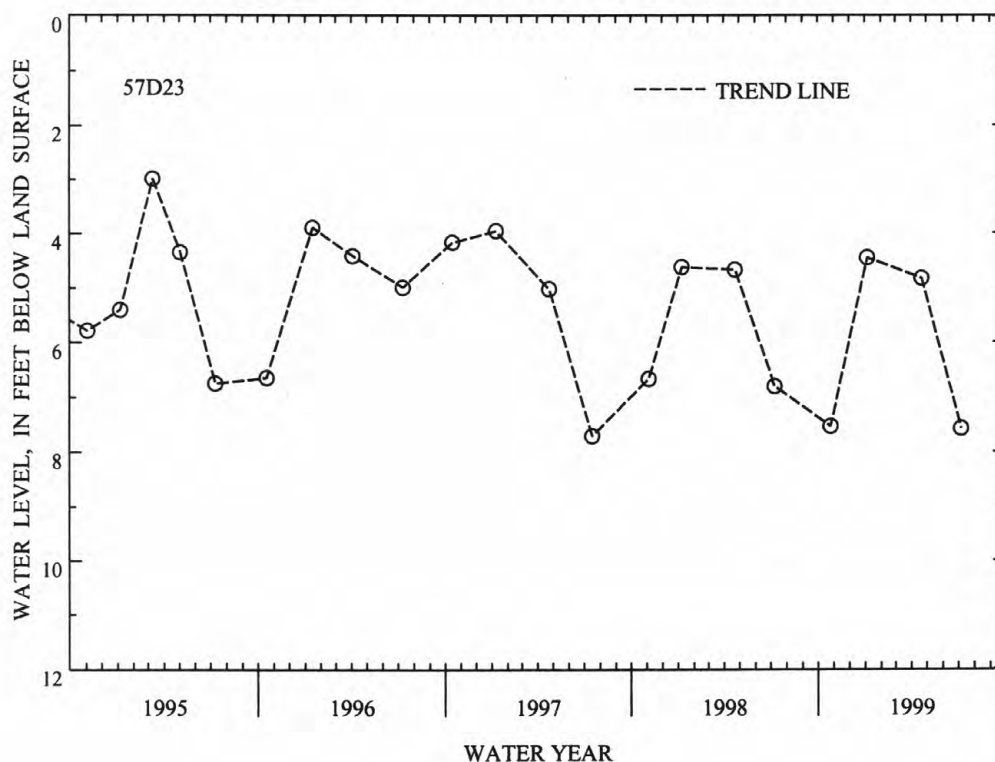
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--April 1980 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.29 ft below land-surface datum, Feb. 23, 1987; lowest measured, 8.70 ft below land-surface datum, Aug. 11, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	7.53	JAN 06	4.45	APR 22	4.83	JUL 07	7.57
WATER YEAR 1999	HIGHEST	4.45	JAN 06, 1999				
	LOWEST	7.57	JUL 07, 1999				



GROUND-WATER LEVELS

ISLE OF WIGHT COUNTY

370236076425901. Local number, 57E 10 SOW 144B.

LOCATION.--Lat 37°02'36", long 76°42'59", Hydrologic Unit 02080206, 0.5 mi east of State Highway 627, 1.0 mi north of State Highway 621, and 2.5 mi southwest of Rushmere. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 440 ft, screened 430 to 440 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 7, 1985, to July 10, 1995, bimonthly measurement with chalked tape. Prior to Oct. 7, 1985, monthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 85 ft above sea level, from topographic map. Measuring point: Top of casing, 1.5 ft above land-surface datum.

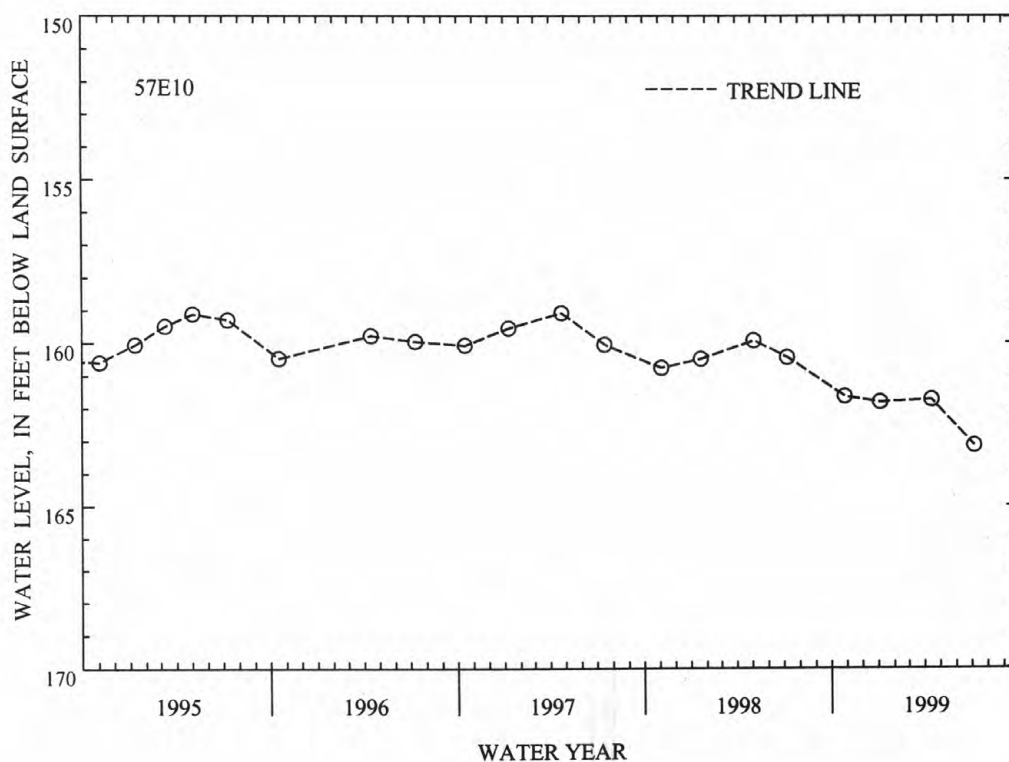
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage and regional drawdown.

PERIOD OF RECORD.--April 1980 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 139.90 ft below land-surface datum, Apr. 24, July 24, 1980; lowest measured, 163.14 ft below land-surface datum, July 7, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	161.63	JAN 06	161.81	APR 16	161.73	JUL 07	163.14
WATER YEAR 1999		HIGHEST	161.63	OCT 29, 1998			
		LOWEST	163.14	JUL 07, 1999			



GROUND-WATER LEVELS

ISLE OF WIGHT COUNTY

370253076431201. Local number, 57E 14 SOW 144A.

LOCATION.--Lat 37°02'53", long 76°43'12", Hydrologic Unit 02080208, 0.5 mi east of State Highway 627, 1.0 mi north of State Highway 621, and 2.5 mi southwest of Rushmere. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in. to 590 ft, diameter 3 in. from 590 to 600 ft, depth 600 ft, screened 590 to 600 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 7, 1985, to July 10, 1995, bimonthly measurement with chalked tape. Prior to Oct. 7, 1985, monthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 86 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.

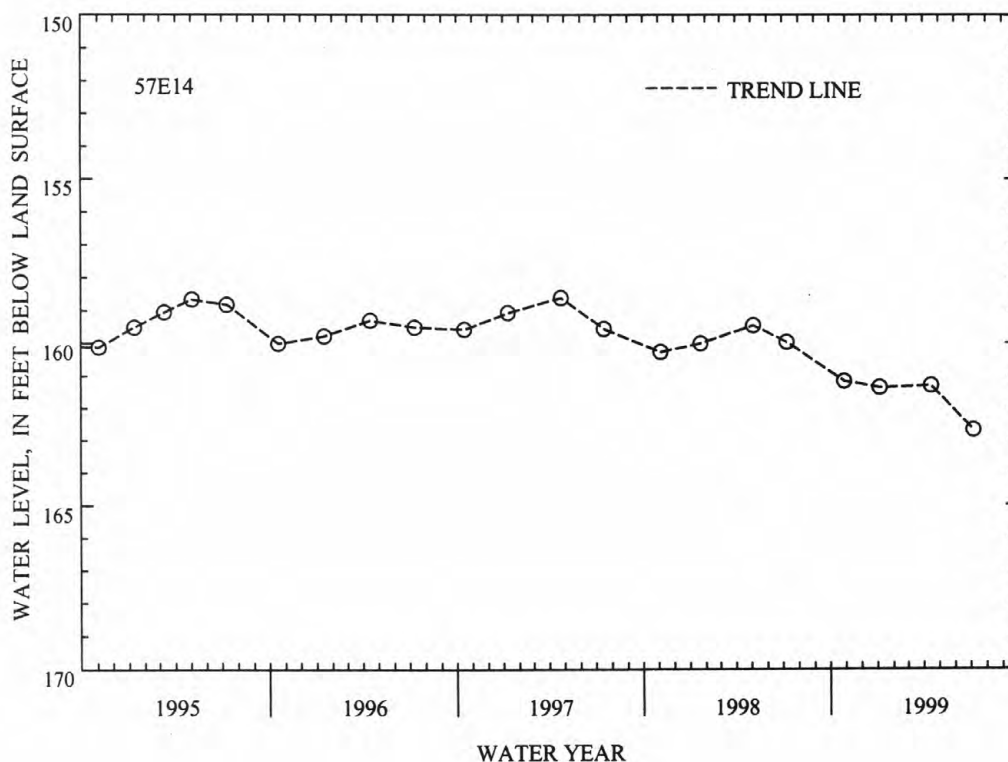
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage and regional drawdown.

PERIOD OF RECORD.--April 1980 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 139.49 ft below land-surface datum, Apr. 24, 1980; lowest measured, 162.67 ft below land-surface datum, July 7, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	161.16	JAN 06	161.36	APR 16	161.30	JUL 07	162.67
WATER YEAR 1999	HIGHEST	161.16	OCT 29, 1998				
	LOWEST	162.67	JUL 07, 1999				



GROUND-WATER LEVELS

ISLE OF WIGHT COUNTY

370253076431202. Local number, 57E 15 SOW 144C.

LOCATION.--Lat 37°02'53", long 76°43'12", Hydrologic Unit 02080208, 0.5 mi east of State Highway 627, 1.0 mi north of State Highway 621, and 2.5 mi southwest of Rushmere. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 20 ft, screened 10 to 20 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 7, 1985, to July 10, 1995, bimonthly measurement with chalked tape. Prior to Oct. 7, 1985, monthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 86 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.

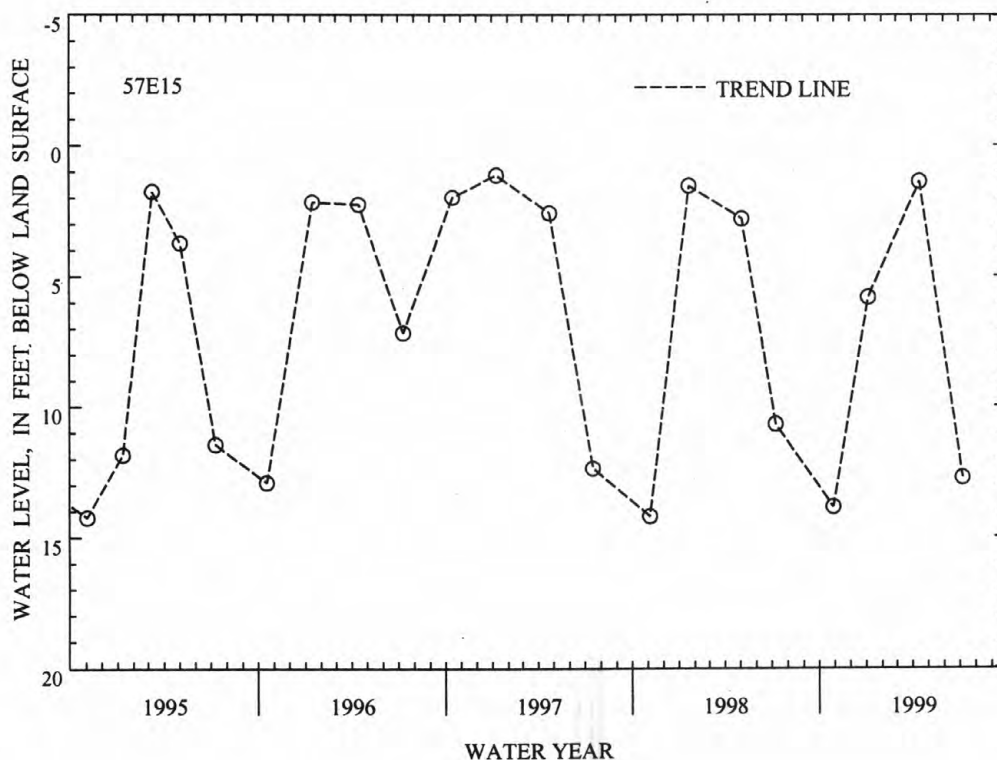
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

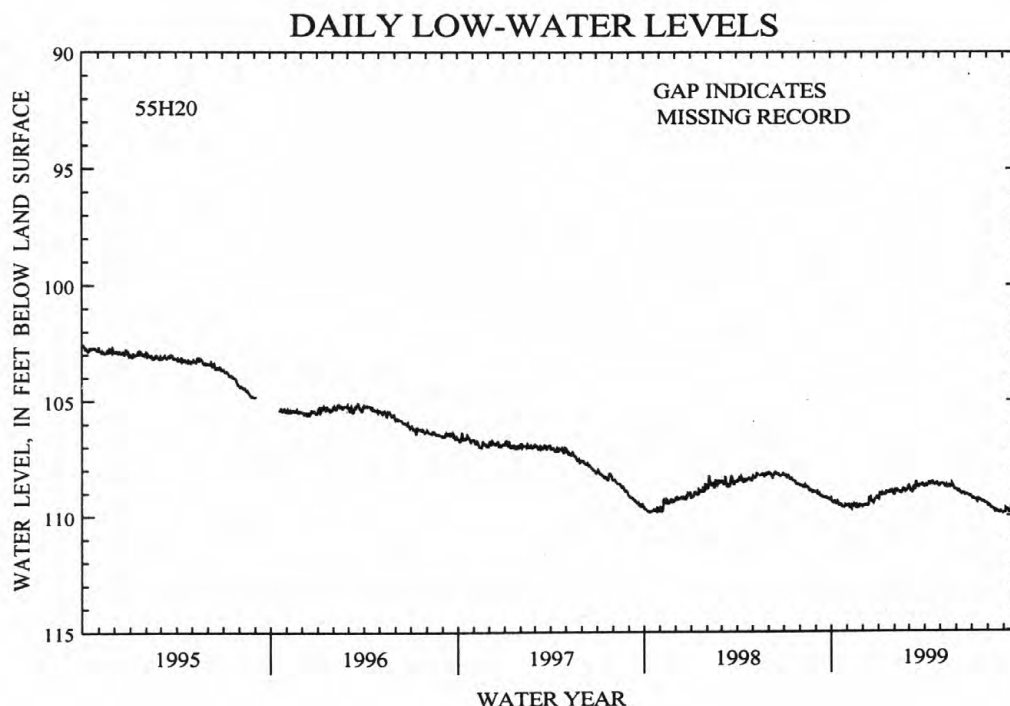
PERIOD OF RECORD.--April 1980 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.88 ft below land-surface datum, Feb. 17, 1994; lowest measured, 14.23 ft below land-surface datum, Nov. 3, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	13.84	JAN 06	5.81	APR 16	1.38	JUL 07	12.73
WATER YEAR 1999		HIGHEST	1.38	APR 16, 1999			
		LOWEST	13.84	OCT 29, 1998			





GROUND-WATER LEVELS

JAMES CITY COUNTY

371311076463601. Local number, 56F 1 SOW 018.

LOCATION.--Lat 37°13'11", long 76°46'36", Hydrologic Unit 02080206, 1,100 ft southwest of Colonial Parkway, 0.5 mi west of State Highway 682, and 0.6 mi north of Jamestown. Owner: U.S. Department of Interior, Colonial National Historical Park.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in., depth 346 ft, screened 336 to 346 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 7, 1995, bimonthly measurement with chalked tape. Sept. 30, 1980, to Sept. 30, 1985, occasional measurement with chalked tape. Prior to Sept. 30, 1980, continuous strip-chart recorder.

DATUM.--Elevation of land-surface datum is 10 ft above sea level, from topographic map. Measuring point: Top edge of recorder shelf, 3.15 ft above land-surface datum.

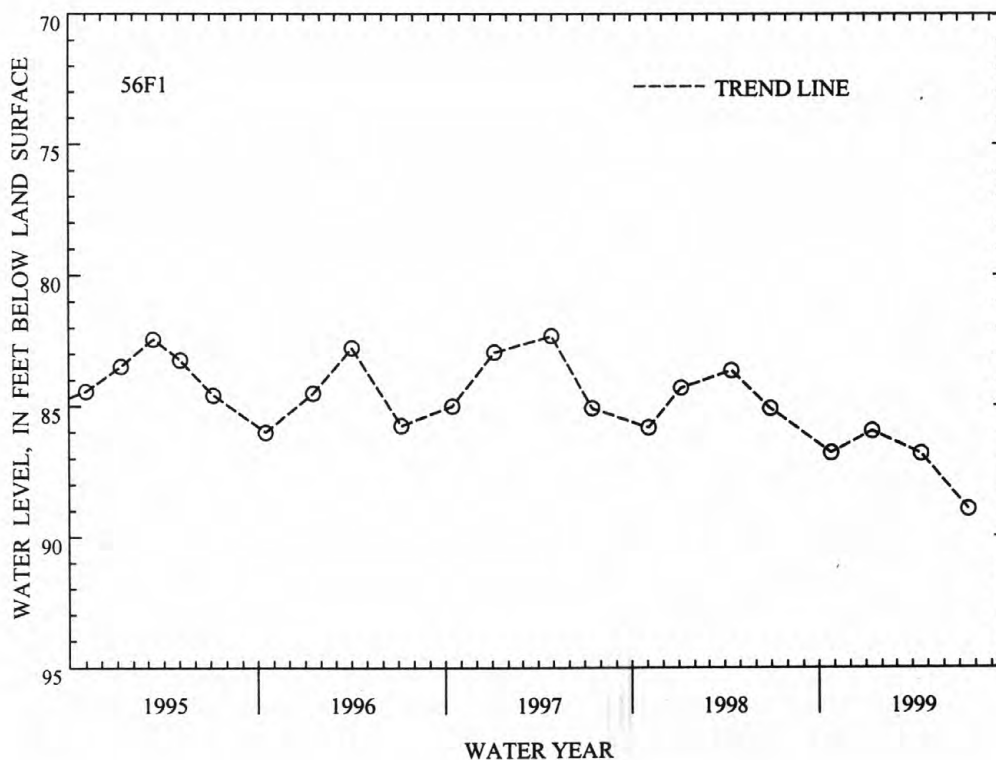
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

PERIOD OF RECORD.--May 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 43.29 ft below land-surface datum, May 8, 1969; lowest measured, 88.95 ft below land-surface datum, July 19, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	86.79	JAN 14	85.96	APR 19	86.82	JUL 19	88.95
WATER YEAR 1999	HIGHEST	85.96	JAN 14, 1999				
	LOWEST	88.95	JUL 19, 1999				



GROUND-WATER LEVELS

JAMES CITY COUNTY

372145076493201. Local number, 56G 57.

LOCATION.--Lat 37°21'45", long 76°49'32", Hydrologic Unit 02080206, 1.75 mi south of the intersection of U.S. Highway 60 and State Highway 631 (Church Lane), off a dirt road at the end of State Highway 631, and 0.10 mi north of the pump station at Little Creek Reservoir. Owner: City of Newport News.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 12 in. to 300 ft, diameter 6 in. from 300 to 695 ft, depth 695 ft, screened 530 to 540 ft, 558 to 598 ft, 604 to 624 ft, 660 to 690 ft.

INSTRUMENTATION.--Digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 84 ft above sea level, from topographic map. Measuring point: Top of casing, 4.3 ft above land-surface datum.

REMARKS.--Water level affected by regional drawdown.

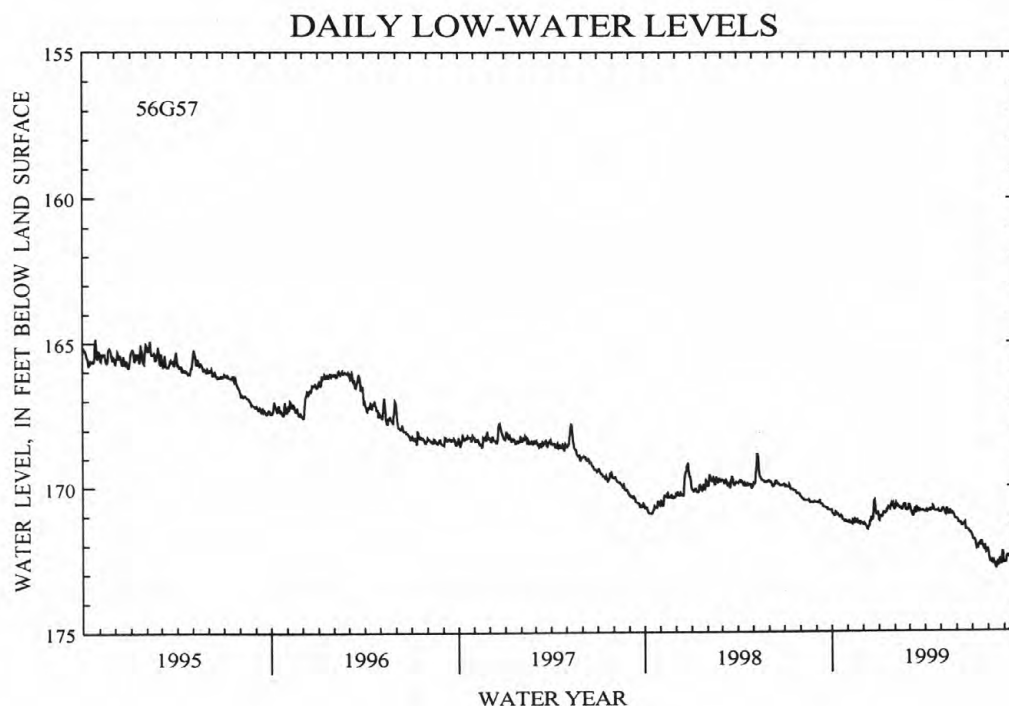
PERIOD OF RECORD.--May 1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 155.79 ft below land-surface datum, May 25, 1988; lowest recorded, 172.82 ft below land-surface datum, Aug. 16, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	170.97	171.19	171.31	171.05	170.68	170.89	170.89	170.78	171.25	171.85	172.57	172.46
10	170.90	171.27	171.46	170.89	170.74	170.86	170.84	170.94	171.34	172.06	172.60	172.40
15	171.00	171.12	171.21	170.89	170.79	170.69	170.79	170.90	171.30	172.01	172.80	172.41
20	171.02	171.19	171.13	170.74	170.61	170.86	170.83	170.88	171.48	171.99	172.66	171.38
25	171.16	171.27	170.78	170.59	170.82	170.84	170.84	170.94	171.57	172.12	172.55	171.48
EOM	171.23	171.26	171.02	170.78	170.64	170.87	170.88	171.12	171.66	172.14	172.64	171.76

WATER YEAR 1999	HIGHEST INSTANTANEOUS	170.28	DEC 24, 1998
	LOWEST INSTANTANEOUS	172.82	AUG 16, 1999



GROUND-WATER LEVELS

JAMES CITY COUNTY

372314076480401. Local number, 56H 22 SOW 135A.

LOCATION.--Lat 37°23'14", long 76°48'04", Hydrologic Unit 02080107, 100 ft south of State Highway 754, 0.2 mi east of intersection of U.S. Highway 60 and State Highway 754, and 0.5 mi north of Toano. Owner: James City Service Authority.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 2 in., depth 645 ft, screened 625 to 645 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 30, 1985, to July 10, 1995, bimonthly measurement with chalked tape. Prior to Sept. 30, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 105 ft above sea level, from topographic map. Measuring point: Top of casing, 0.50 ft above land-surface datum prior to Mar. 3, 1988; at land-surface datum Mar. 3, 1988, to Mar. 1, 1989; 0.50 ft below land-surface datum prior to May 5, 1997; 0.85 ft below land surface datum thereafter.

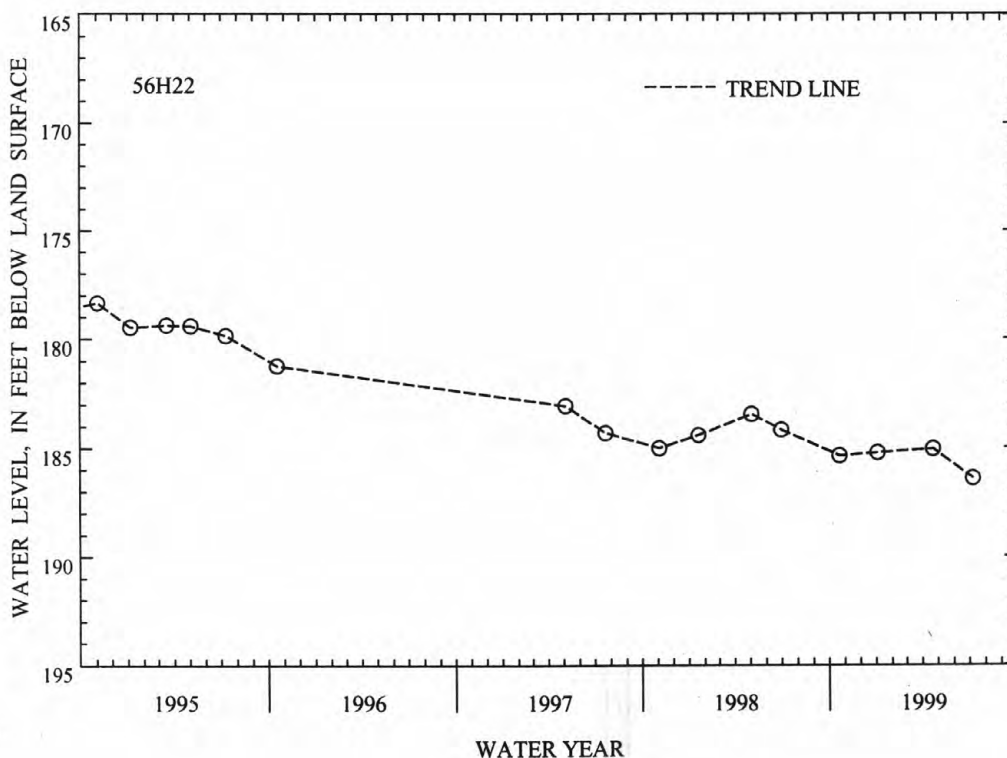
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown and occasional local pumpage.

PERIOD OF RECORD.--March 1979 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 154.85 ft below land-surface datum, Apr. 5, 1979; lowest measured, 186.41 ft below land-surface datum, July 8, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	185.36	JAN 04	185.23	APR 22	185.06	JUL 08	186.41
WATER YEAR 1999	HIGHEST	185.06	APR 22, 1999				
	LOWEST	186.41	JUL 08, 1999				



GROUND-WATER LEVELS

JAMES CITY COUNTY

372506076511701. Local number, 56H 25 SOW 177A.

LOCATION.--Lat 37°25'06", long 76°51'17", Hydrologic Unit 02080206, on the northwest side of State Highway 601 in James City County, 0.7 mi north of the intersection of State Highways 168 and 601, and 3.15 mi west of the intersection of U.S. Highway 60 and State Highway 168. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Lower Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 929 ft, screened 888 to 908 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Sept. 25, 1991 to Sept. 28, 1995, monthly measurement with chalked tape. April 20, 1988 to Sept. 25, 1991, occasional measurement with chalked tape. Prior to Apr. 20, 1988, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 103 ft above sea level, from topographic map. Measuring point: Top of casing, 2.15 ft above land-surface datum prior to Mar. 31, 1994; 1.00 ft thereafter.

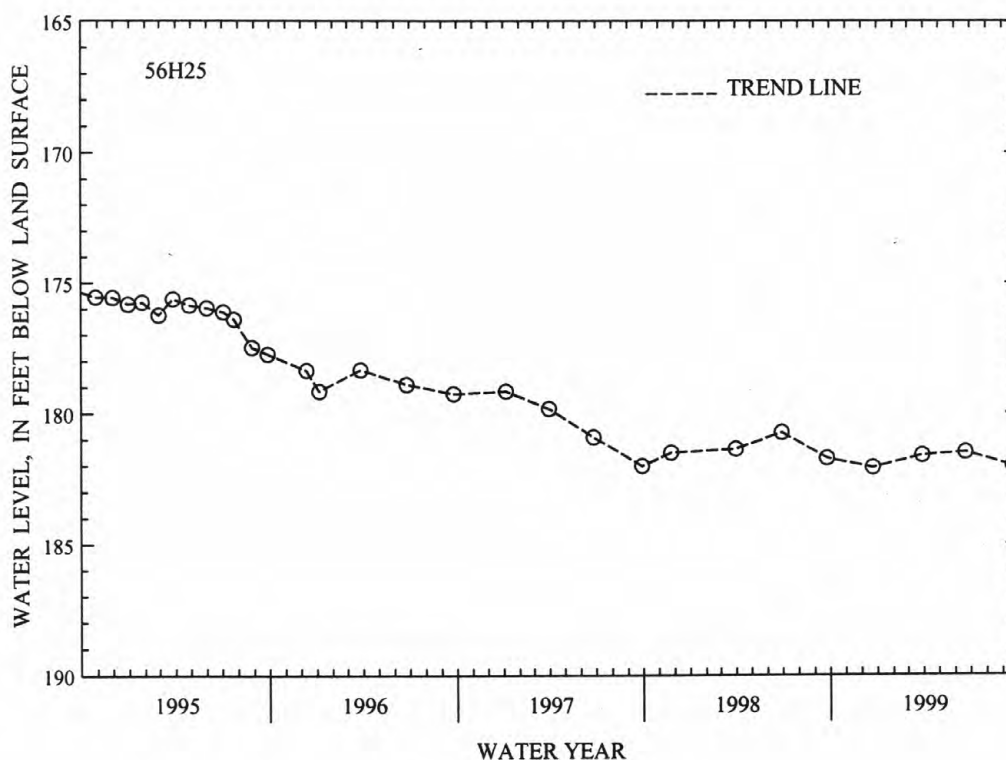
REMARKS.--Water level affected by regional drawdown. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

PERIOD OF RECORD.--April 1985 to current year. Unpublished records available prior to October 1986 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 158.21 ft below land-surface datum, Mar. 19, 20, 1986; lowest measured, 182.08 ft below land-surface datum, Dec. 23, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 23	182.08	MAR 29	181.61	JUN 21	181.49	SEP 21	182.02
WATER YEAR 1999		HIGHEST	181.49	JUN 21, 1999			
		LOWEST	182.08	DEC 23, 1998			



GROUND-WATER LEVELS

JAMES CITY COUNTY

372506076511702. Local number, 56H 26 SOW 177B.

LOCATION.--Lat 37°25'06", long 76°51'17", Hydrologic Unit 02080206, on the northwest side of State Highway 601 in James City County, 0.7 mi north of the intersection of State Highways 168 and 601, and 3.15 mi west of the intersection of U.S. Highway 60 and State Highway 168. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 581 ft, screened 550 to 560 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Sept. 25, 1991 to Sept. 28, 1995, monthly measurement with chalked tape. April 20, 1988 to Sept. 25, 1991, occasional measurement with chalked tape. Prior to Oct. 1, 1988, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 103 ft above sea level, from topographic map. Measuring point: Top of casing, 2.15 ft above land-surface datum prior to Mar. 31, 1994; 0.65 ft thereafter.

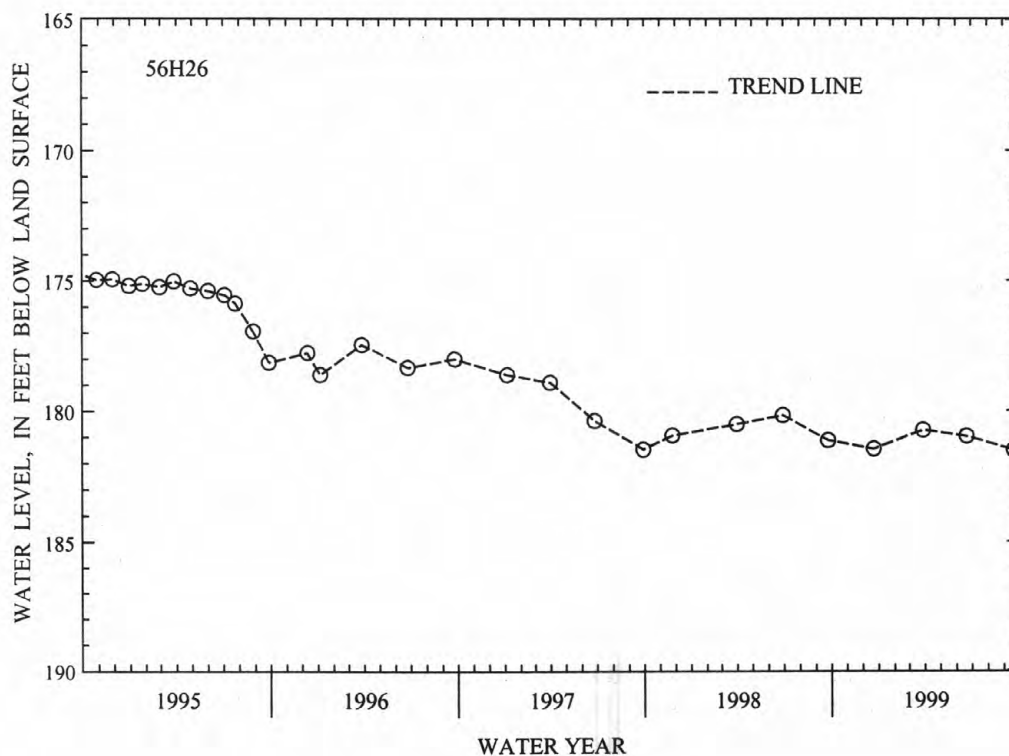
REMARKS.--Water level affected by regional drawdown.

PERIOD OF RECORD.--April 1985 to current year. Unpublished records prior to October 1986 and fragmentary periods of continuous record for water year 1989 available in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 157.61 ft below land-surface datum, June 1, 2, 1985; lowest measured, 181.50 ft below land-surface datum, Sept. 21, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 23	181.45	MAR 29	180.73	JUN 21	180.97	SEP 21	181.50
WATER YEAR 1999	HIGHEST	180.73	MAR 29, 1999				
	LOWEST	181.50	SEP 21, 1999				



GROUND-WATER LEVELS

JAMES CITY COUNTY

372506076511703. Local number, 56H 27 SOW 177C.

LOCATION.--Lat 37°25'06", long 76°51'17", Hydrologic Unit 02080206, on the northwest side of State Highway 601 in James City County, 0.7 mi north of the intersection of State Highways 168 and 601, and 3.15 mi west of the intersection of U.S. Highway 60 and State Highway 168. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 401 ft, screened 370 to 380 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel. Prior to Aug. 26, 1993, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 103 ft above sea level, from topographic map. Measuring point: Top of casing, 2.95 ft above land-surface datum prior to Mar. 31, 1994; 1.35 ft thereafter.

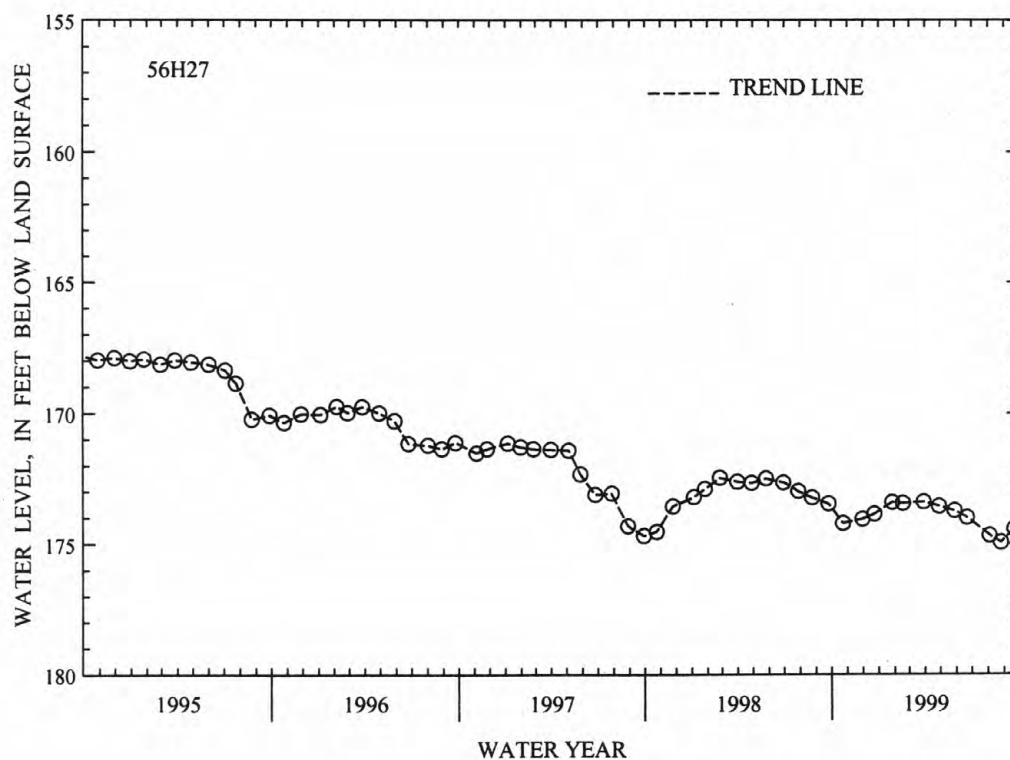
REMARKS.--Water level affected by regional drawdown.

PERIOD OF RECORD.--April 1985 to current year. Unpublished records available prior to October 1986 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 153.47 ft below land-surface datum, June 1, 2, 1985; lowest measured, 174.94 ft below land-surface datum, Aug. 26, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 23	174.07	DEC 23	173.85	FEB 17	173.43	APR 28	173.55	JUN 21	173.98	AUG 26	174.94
NOV 30	174.04	JAN 27	173.40	MAR 29	173.38	MAY 28	173.72	AUG 04	174.67	SEP 21	174.42
WATER YEAR 1999		HIGHEST	173.38	MAR 29, 1999							
		LOWEST	174.94	AUG 26, 1999							



GROUND-WATER LEVELS

JAMES CITY COUNTY

372506076511704. Local number, 56H 28 SOW 177D.

LOCATION.--Lat 37°25'06", long 76°51'17", Hydrologic Unit 02080206, 3.15 mi west of the intersection of U.S. Highway 60 and State Highway 168, 0.7 mi north of the intersection of State Highways 168 and 601, and on the northwest side of State Highway 601 in James City County. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Aquia aquifer of Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 321 ft, screened 290 to 300 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Sept. 25, 1991 to Sept. 28, 1995, monthly measurement with chalked tape. April 20, 1988 to Sept. 25, 1991, occasional measurement with chalked tape. Prior to Sept. 16, 1989, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 103 ft above sea level, from topographic map. Measuring point: Top of casing, 2.9 ft above land-surface datum prior to Dec. 4, 1989; 0.9 ft thereafter.

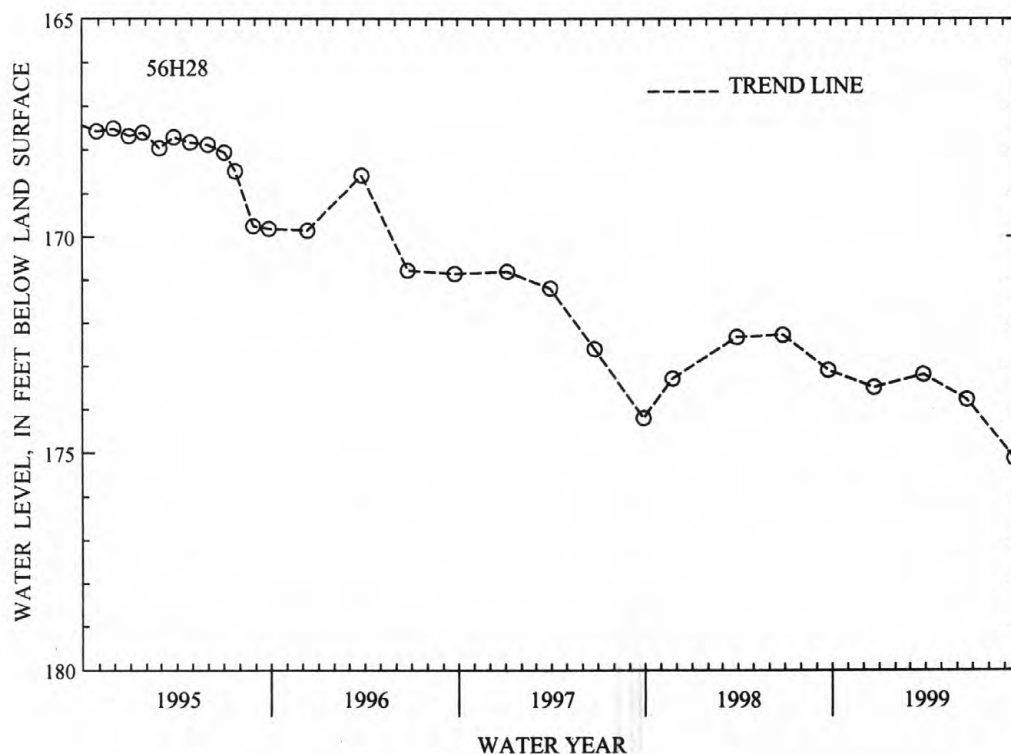
REMARKS.--Water level affected by regional drawdown.

PERIOD OF RECORD.--April 1985 to current year. Unpublished records available prior to October 1986 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 153.20 ft below land-surface datum, May 31, 1985; lowest measured, 175.14 ft below land-surface datum, Sept. 21, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 23	173.50	MAR 29	173.20	JUN 21	173.78	SEP 21	175.14
WATER YEAR 1999	HIGHEST	173.20	MAR 29, 1999				
	LOWEST	175.14	SEP 21, 1999				



GROUND-WATER LEVELS

JAMES CITY COUNTY

372506076511705. Local number, 56H 29 SOW 177E.

LOCATION.--Lat 37°25'06", long 76°51'17", Hydrologic Unit 02080206, on the northwest side of State Highway 601 in James City County, 0.7 mi north of the intersection of State Highways 168 and 601, and 3.15 mi west of the intersection of U.S. Highway 60 and State Highway 168. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Chickahominy-Piney Point aquifer of Eocene-Oligocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 235 ft, screened 204 to 214 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Sept. 25, 1991 to Sept. 28, 1995, monthly measurement with chalked tape. April 20, 1988 to Sept. 25, 1991, occasional measurement with chalked tape. Prior to Sept. 21, 1989, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 103 ft above sea level, from topographic map. Measuring point: Top of casing, 2.8 ft above land-surface datum prior to Dec. 4, 1989; 0.75 ft thereafter.

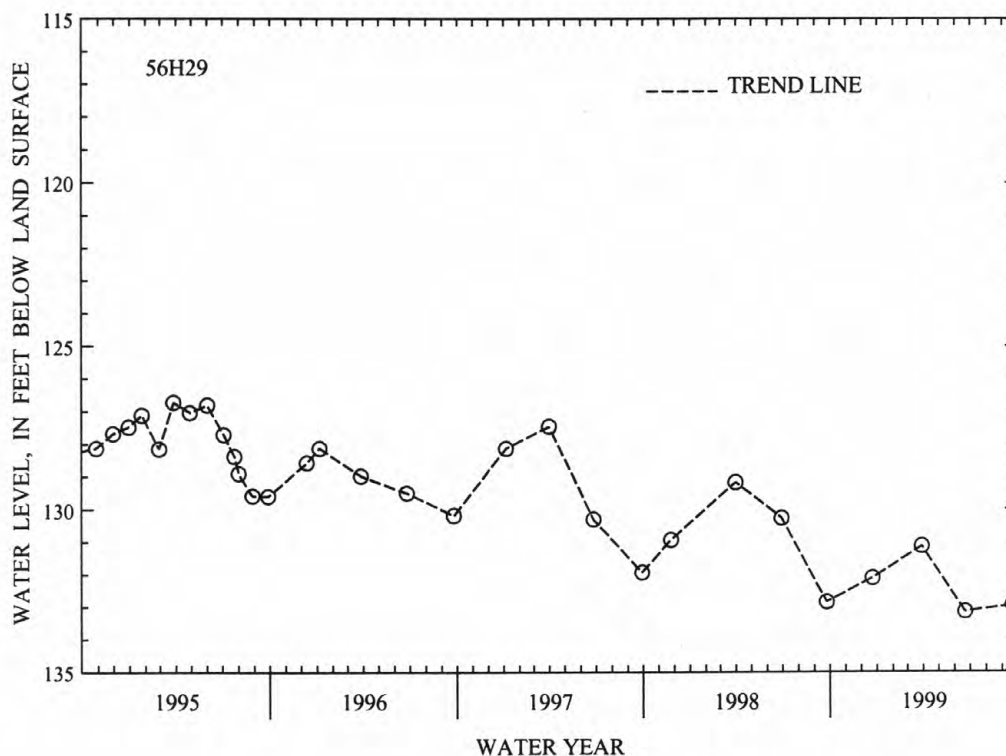
REMARKS.--Water level affected by regional drawdown.

PERIOD OF RECORD.--April 1985 to current year. Unpublished records available prior to October 1986 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 111.96 ft below land-surface datum, Feb. 27, 1986; lowest measured, 133.14 ft below land-surface datum, June 21, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 23	132.10	MAR 29	131.13	JUN 21	133.14	SEP 21	132.94
WATER YEAR 1999	HIGHEST	131.13	MAR 29, 1999				
	LOWEST	133.14	JUN 21, 1999				



GROUND-WATER LEVELS

JAMES CITY COUNTY

372506076511706. Local number, 56H 30 SOW 177F.

LOCATION.--Lat 37°25'06", long 76°51'17", Hydrologic Unit 02080206, on the northwest side of State Highway 601 in James City County, 0.7 mi north of the intersection of State Highways 168 and 601, and 3.15 mi west of the intersection of U.S. Highway 60 and State Highway 168. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 60 ft, screened 50 to 60 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Sept. 25, 1991 to Sept. 28, 1995, monthly measurement with chalked tape. April 20, 1988 to Sept. 25, 1991, occasional measurement with chalked tape. Prior to Sept. 20, 1989, digital recorder--60-minute punch.

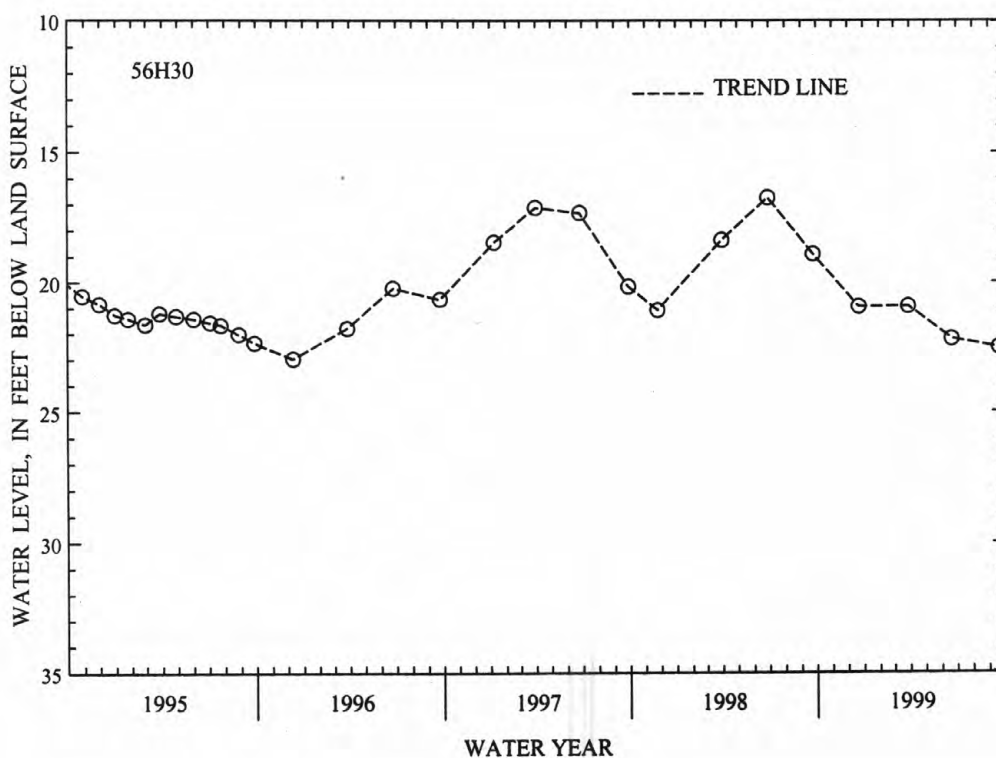
DATUM.--Elevation of land-surface datum is 103 ft above sea level, from topographic map. Measuring point: Top of casing, 2.9 ft above land-surface datum prior to Dec. 4, 1989; 1.1 ft thereafter.

PERIOD OF RECORD.--April 1985 to current year. Unpublished records available prior to October 1986 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.73 ft below land-surface datum, June 29, 1998; lowest measured, 24.45 ft below land-surface datum, Feb. 28, 1992.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 23	20.95	MAR 29	20.94	JUN 21	22.21	SEP 21	22.54
WATER YEAR 1999	HIGHEST	20.94	MAR 29, 1999				
	LOWEST	22.54	SEP 21, 1999				



GROUND-WATER LEVELS

JAMES CITY COUNTY

372314076480402. Local number, 56H 31 SOW 135B.

LOCATION.--Lat 37°23'14", long 76°48'04", Hydrologic Unit 02080107, 100 ft south of State Highway 754, 0.2 mi east of intersection of State Highway 754 and U.S. Highway 60, and 0.5 mi north of Toano. Owner: James City Service Authority.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in., depth 30 ft, screened 20 to 30 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 30, 1985, to July 10, 1995, bimonthly measurement with chalked tape. Prior to Sept. 30, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 95 ft above sea level, from topographic map. Measuring point: Top of casing, 0.3 ft above land-surface datum prior to Mar. 3, 1988; at land-surface datum Mar. 3, 1988, to Mar. 1, 1989; 0.2 ft below land-surface datum prior to May 5, 1997; 0.95 ft below land surface datum thereafter.

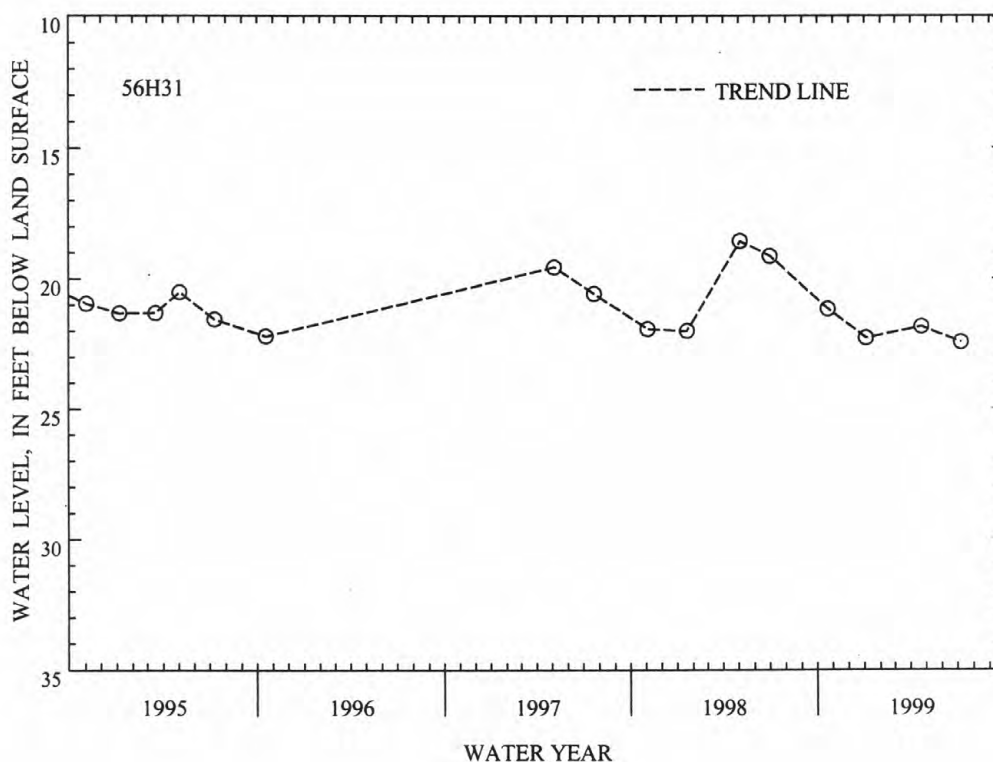
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--August 1979 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 16.28 ft below land-surface datum, June 8, 1984; lowest measured, 23.80 ft below land-surface datum, Mar. 1, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	21.15	JAN 04	22.27	APR 22	21.83	JUL 08	22.43
WATER YEAR 1999		HIGHEST	21.15	OCT 22, 1998			
		LOWEST	22.43	JUL 08, 1999			



GROUND-WATER LEVELS

JAMES CITY COUNTY

372315076415001. Local number 57H 14 SOW 095.

LOCATION.--Lat 37°23'15", long 76°41'50", Hydrologic Unit 02080107, 500 ft north of State Highway 606, 0.8 mi east of intersection of State Highway 606 and 646, and 3.3 mi east of Croaker. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in., depth 123 ft, screened 118 to 123 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 30, 1985, to July 10, 1995, bimonthly measurement with chalked tape. Prior to Sept. 30, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 95 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum prior to Mar. 3, 1988; 1.4 ft thereafter.

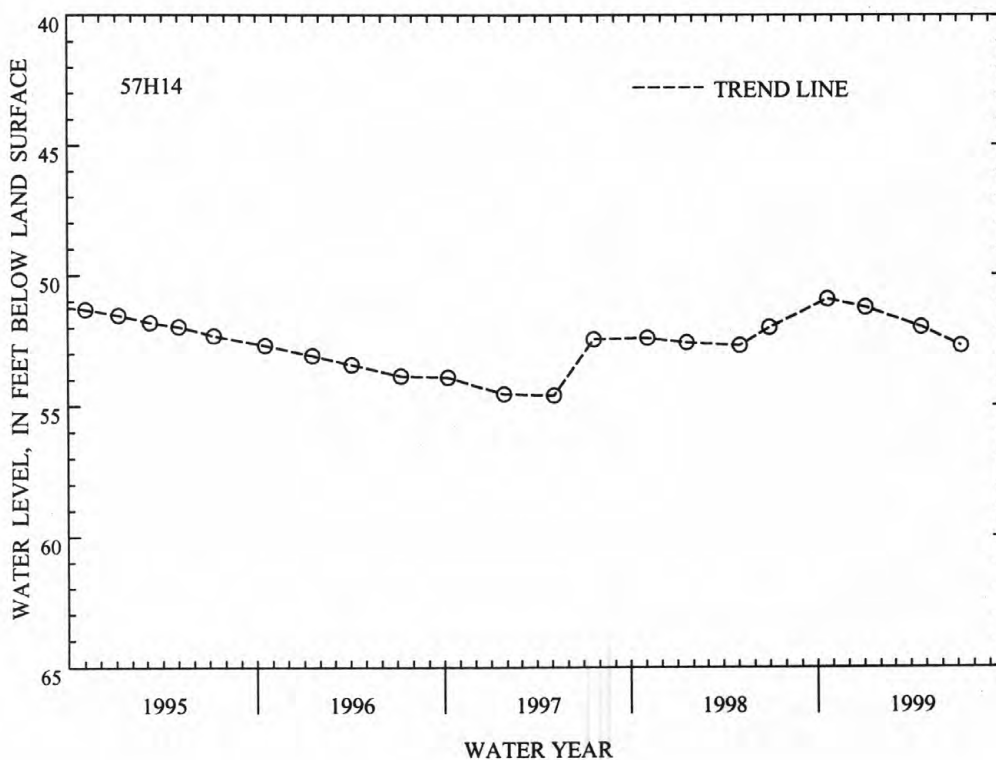
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage.

PERIOD OF RECORD.--September 1978 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 45.00 ft below land-surface datum, Sept. 21, 1978; lowest measured, 54.64 ft below land-surface datum, Apr. 19, 1993.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	50.92	JAN 04	51.23	APR 22	51.98	JUL 08	52.69
WATER YEAR 1999	HIGHEST	50.92	OCT 22, 1998				
	LOWEST	52.69	JUL 08, 1999				



GROUND-WATER LEVELS

KING AND QUEEN COUNTY

374739077052701. Local number, 54L 10.

LOCATION.--Lat 37°47'39", long 77°05'27", Hydrologic Unit 02080105, at Virginia Department of Transportation way-side picnic table, 50 ft north of U.S. Highway 360 and 1 mi. east of Mattaponi River. Owner: U.S. Geological Survey.

AQUIFER.--Chickhominy-Piney Point aquifer of Eocene-Oligocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 2 in., depth 96.21 ft, screened 86.21 ft to 96.21 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to October 1998, monthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 52 ft above sea level. Measuring point: Top of casing, 3.06 ft above land-surface datum.

REMARKS.--Well drilled as part of Fall Zone ground-water study.

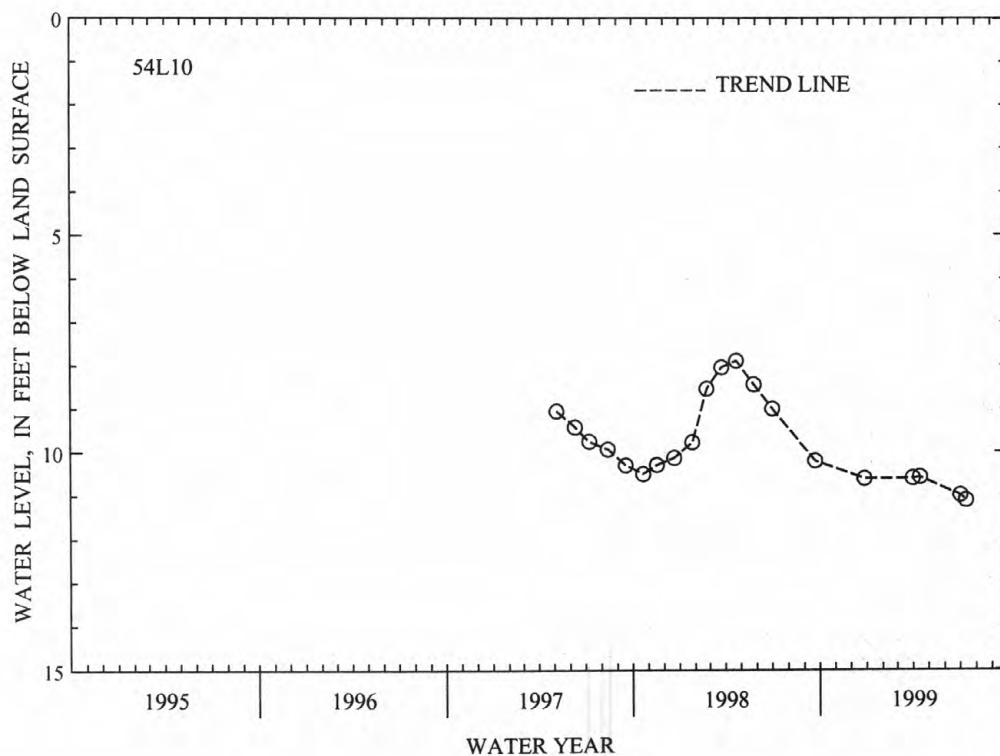
PERIOD OF RECORD.--May 1997 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.89 ft below land-surface datum, Apr. 23, 1998; lowest measured, 11.11 ft below land-surface datum, July 13, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 28	10.61	APR 01	10.60	APR 15	10.57	JUL 02	10.99	JUL 13	11.11

WATER YEAR 1999	HIGHEST	10.57	APR 15, 1999
	LOWEST	11.11	JUL 13, 1999



GROUND-WATER LEVELS

KING AND QUEEN COUNTY

373126076454101. Local number, 56J 11 SOW 073.

LOCATION.--Lat 37°31'26", long 76°45'41", Hydrologic Unit 02080105, at West Point Airport, 1.7 mi southeast of West Point. Owner: St. Laurent Paper Products Corporation (formerly Chesapeake Corporation).

AQUIFER.--Lower Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in., depth 1,254 ft, screened 1,233 to 1,248 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, 2.5 ft above land-surface datum; prior to Mar. 15, 1993, top of casing, 0.6 ft above land-surface datum.

REMARKS.--Water level affected by regional drawdown. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

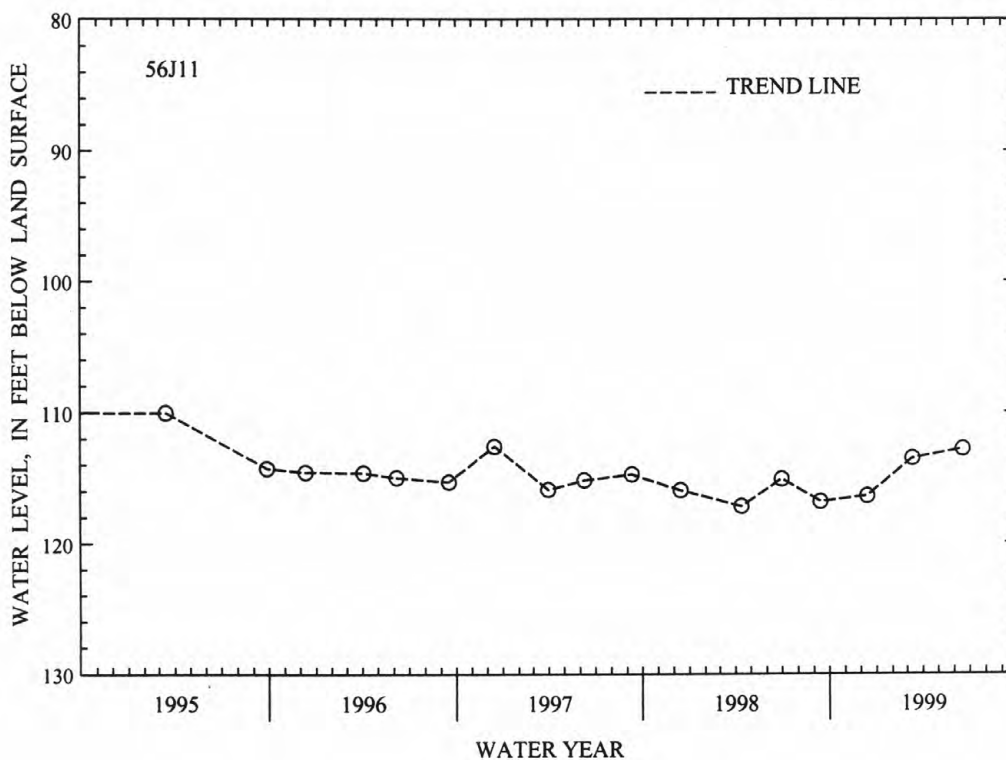
PERIOD OF RECORD.--November 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 73.08 ft below land-surface datum, Apr. 25, 1975; lowest measured, 117.18 ft below land-surface datum, Apr. 13, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 14	116.39	MAR 12	113.52	JUN 18	112.80

WATER YEAR 1999	HIGHEST	112.80	JUN 18, 1999
	LOWEST	116.39	DEC 14, 1998



GROUND-WATER LEVELS

KING AND QUEEN COUNTY

373008076425601. Local number, 57J 3 SOW 074.

LOCATION.--Lat 37°30'08", long 76°42'56", Hydrologic Unit 02080107, off State Highway 606, 0.4 mi northeast of intersection of State Highways 606 and 605, and 2.8 mi south of Shacklefords. Owner: St. Laurent Paper Products Corporation (formerly Chesapeake Corporation).

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in. to 200 ft, diameter 4 in. from 200 to 760 ft, depth 760 ft, screened 741 to 756 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 51 ft above sea level, from topographic map. Measuring point: Top of casing, 2.60 ft above land-surface datum; prior to Mar. 15, 1993, top of casing, 0.20 ft above land-surface datum.

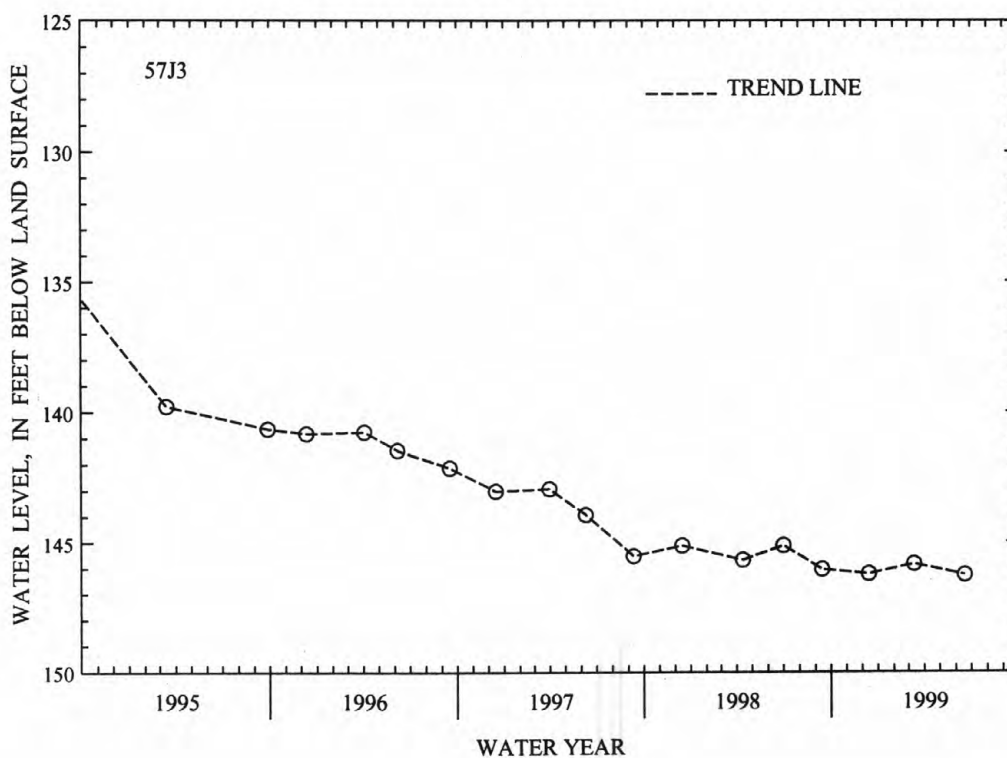
REMARKS.--Water level affected by regional drawdown.

PERIOD OF RECORD.--November 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 109.90 ft below land-surface datum, Jan. 26, 1975; lowest measured, 146.26 ft below land-surface datum, June 18, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
	DEC 14	146.22	MAR 12	145.84	JUN 18	146.26
WATER YEAR 1999	HIGHEST	145.84	MAR 12, 1999			
	LOWEST	146.26	JUN 18, 1999			



GROUND-WATER LEVELS

KING GEORGE COUNTY

382129077005801. Local number, 54Q 21.

LOCATION.--Lat 38°21'29", long 77°00'58", Hydrologic Unit 02070011, 200 ft west of the Potomac River, 400 ft south of U.S. Highway 301, 750 ft east of Blandy Boulevard, and at the Naval Surface Warfare Center, Dahlgren Laboratory, in Dahlgren. Owner: U.S. Department of the Navy.

AQUIFER.--Aquia aquifer of Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 10 in. from 0 to 25 ft, diameter 4 in. from 0 to 197 ft, 217 to 219.25 ft, depth 219.25 ft, screened 197 to 217 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to Oct. 26, 1994, digital recorder--60-minute punch.

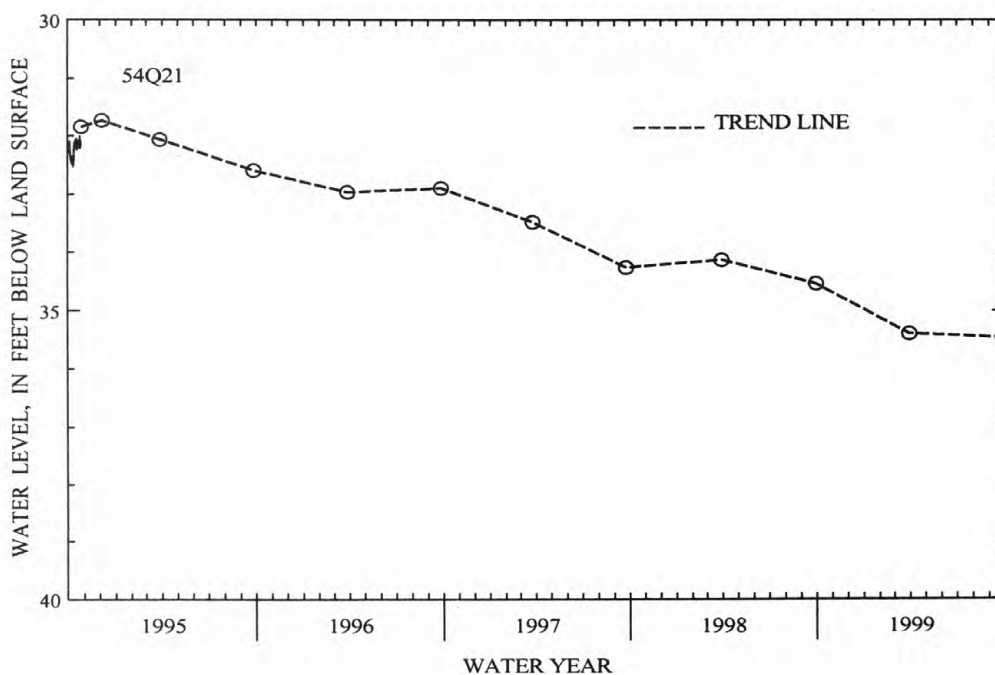
DATUM.--Elevation of land-surface datum is 20.46 ft above sea level. Measuring point: Top of recorder shelf, 2.65 ft above land-surface datum prior to Nov. 4, 1994; top of casing, 2.10 ft thereafter.

PERIOD OF RECORD.--September 1992 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 29.00 ft below land-surface datum, Mar. 4, 1993; lowest measured, 35.46 ft below land-surface datum, Sept. 28, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

	DATE	WATER LEVEL	DATE	WATER LEVEL
	MAR 30	35.39	SEP 28	35.46
WATER YEAR 1999	HIGHEST	35.39	MAR 30, 1999	
	LOWEST	35.46	SEP 28, 1999	



GROUND-WATER LEVELS

KING GEORGE COUNTY

382103077025403. Local number, 54Q 28.

LOCATION.--Lat 38°21'03", long 77°02'54", Hydrologic Unit 02070011, 100 ft southwest of intersection of Bennion Road and Perimeter Road, 100 ft east of Perimeter Road at edge of woods, and at the Naval Surface Warfare Center, Dahlgren Laboratory, in Dahlgren. Owner: U.S. Department of the Navy.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in. to 9.7 ft, 19.7 to 21.95 ft, depth 21.95 ft, screened 9.7 to 19.7 ft.

INSTRUMENTATION.--Electronic pressure transducer data logger--60 minute-record interval. Oct. 26, 1994 to Feb. 24, 1997, occasional measurement with chalked tape by USGS personnel. Prior to Oct. 26, 1994, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 21.33 ft above sea level. Measuring point: Top of recorder shelf, 2.5 ft above land-surface datum prior to Nov. 4, 1994; top of casing, 1.96 ft thereafter.

PERIOD OF RECORD.--September 1992 to September 1999 (discontinued).

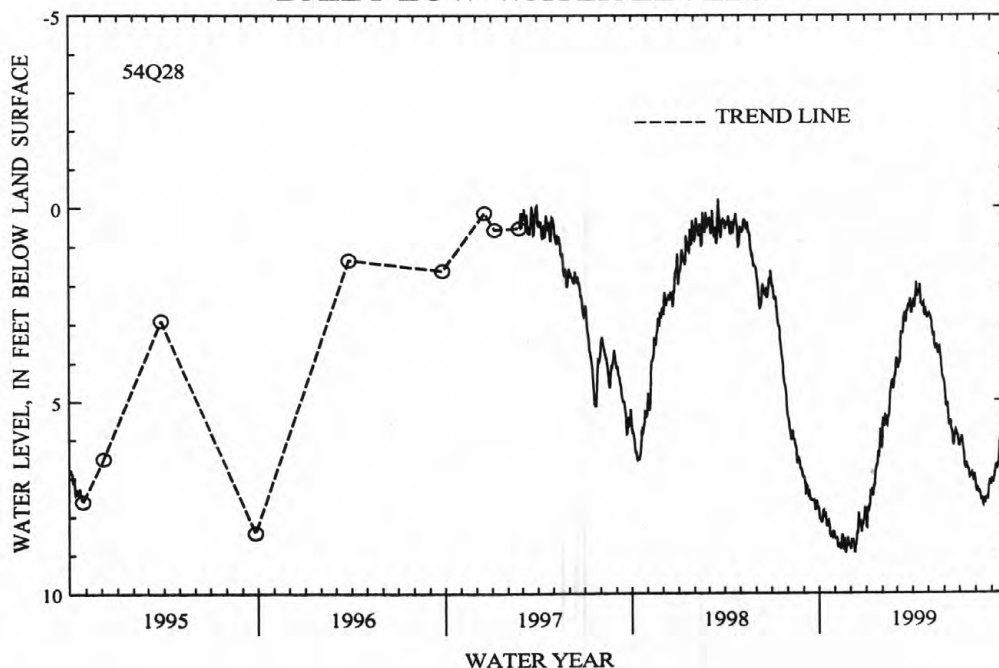
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.85 ft above land-surface datum, Mar. 13, 1993; lowest recorded, 8.95 ft below land-surface datum, Nov. 22, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	8.11	8.57	8.66	7.89	5.67	4.15	2.57	2.78	5.10	5.93	7.24	7.01
10	7.84	8.75	8.92	7.47	5.60	3.23	2.29	3.21	5.60	6.43	7.39	6.65
15	8.18	8.47	8.43	7.23	5.28	2.84	2.12	3.61	5.70	6.63	7.67	6.55
20	8.18	8.57	8.19	6.79	4.48	2.97	2.50	3.69	6.13	6.95	7.65	5.61
25	8.41	8.78	8.24	6.38	4.44	2.50	2.75	3.80	5.77	6.88	7.55	5.28
EOM	8.52	8.72	8.01	6.23	4.06	2.71	2.86	4.42	6.16	6.99	7.17	5.03

WATER YEAR 1999 HIGHEST INSTANTANEOUS 1.62 APR 9, 1999
LOWEST INSTANTANEOUS 8.95 NOV 22, 1998

DAILY LOW-WATER LEVELS



GROUND-WATER LEVELS

KING GEORGE COUNTY

381812077015201. Local number, 54Q 78.

LOCATION.--Lat 38°18'12", long 77°01'52", Hydrologic Unit 02070011, at intersection of two unnamed roads, 1.1 mi northeast of the main gate at Tetotum Flats at the Naval Surface Warfare Center, Dahlgren Laboratory, in Dahlgren. Owner: U.S. Department of the Navy.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in. to 7.5 ft, 17.5 to 20.0 ft, depth 20.0 ft, screened 7.5 to 17.5 ft.

INSTRUMENTATION.--Electronic pressure transducer data logger--60 minute record interval. Prior to Nov. 17, 1998, occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 16.33 ft above sea level. Measuring point: Top of casing, 0.11 ft below land-surface datum.

PERIOD OF RECORD.--March 1994 to September 1999 (discontinued).

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.30 ft below land-surface datum, Mar. 29, 1994; lowest recorded, 10.80 ft below land-surface datum, Sept. 3, 4, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 2	9.80	NOV 17	10.58

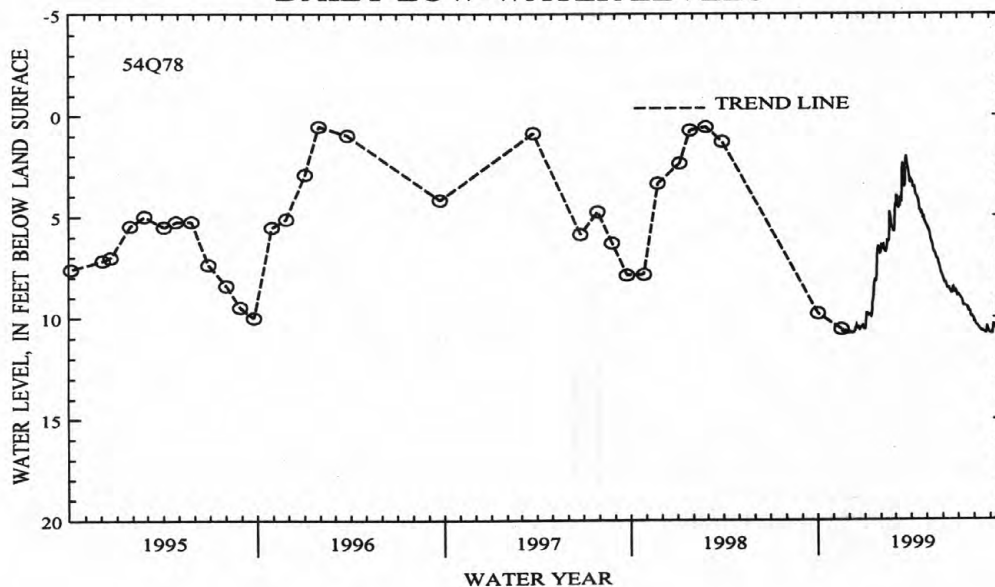
WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	10.75	9.78	6.53	4.02	3.56	5.68	8.29	8.96	10.30	10.74
10	---	---	10.74	9.89	6.76	4.49	3.95	6.23	8.54	9.22	10.46	10.44
15	---	---	10.52	9.85	6.28	2.68	4.18	6.73	8.63	9.42	10.63	10.63
20	---	10.64	10.51	8.30	5.00	3.53	4.80	7.06	8.80	9.58	10.69	6.74
25	---	10.69	10.52	6.95	5.61	2.45	5.10	7.38	8.72	9.69	10.78	7.07
EOM	---	10.71	10.52	6.86	5.65	3.34	5.42	7.89	8.92	10.00	10.73	7.17

WATER YEAR 1999	HIGHEST INSTANTANEOUS	1.80	MAR 22, 1999
	LOWEST INSTANTANEOUS	10.80	SEP 3, 4, 1999

DAILY LOW-WATER LEVELS



GROUND -WATER LEVELS

KING GEORGE COUNTY

381825077021101. Local number, 54Q 79.

LOCATION.--Lat 38°18'25", long 77°02'11", Hydrologic Unit 02070011, 1.1 mi northeast of the main gate at Tetotum Flats at the Naval Surface Warfare Center, Dahlgren Laboratory, in Dahlgren. Owner: U.S. Department of the Navy.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in. to 9.1 ft, 14.1 to 16.6 ft, depth 16.6 ft, screened 9.1 to 14.1 ft.

INSTRUMENTATION.--Electronic pressure transducer data logger--60 minute record interval. Prior to Feb. 17, 1999, occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 11.43 ft above sea level. Measuring point: Top of casing, 0.10 ft above land-surface datum.

PERIOD OF RECORD.--March 1994 to September 1999 (discontinued).

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.62 ft below land-surface datum, Mar. 29, 1994; lowest recorded, 11.79 ft below land-surface datum, Aug. 24, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

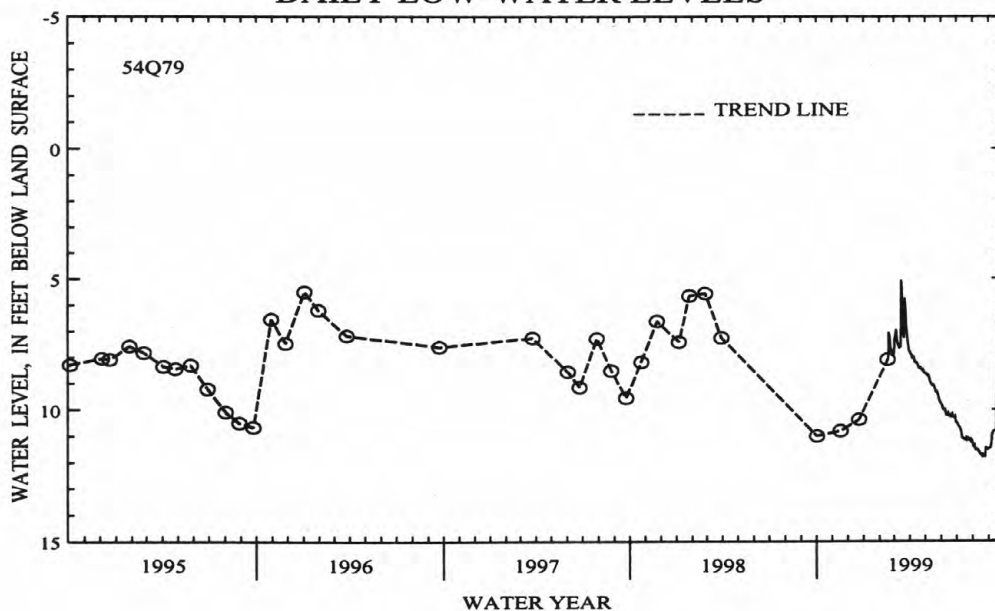
DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 02	11.00	NOV 17	10.80	DEC 23	10.37	FEB 17	10.37

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999 LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	---	---	---	---	---	6.96	8.04	8.69	10.00	10.64	11.38	11.34
10	---	---	---	---	---	7.58	8.19	8.94	10.19	10.91	11.51	10.82
15	---	---	---	---	---	5.08	8.25	9.07	10.23	11.11	11.68	10.77
20	---	---	---	---	7.17	7.23	8.43	9.26	10.27	11.17	11.78	7.09
25	---	---	---	---	7.79	6.86	8.50	9.42	10.28	11.11	11.78	7.74
EOM	---	---	---	---	7.90	7.79	8.62	9.76	10.48	11.22	11.50	7.73

WATER YEAR 1999	HIGHEST INSTANTANEOUS	3.15	MAR 15, 1999
	LOWEST INSTANTANEOUS	11.79	AUG 24, 1999

DAILY LOW-WATER LEVELS



GROUND-WATER LEVELS

KING GEORGE COUNTY

381817077023101. Local number, 54Q 80.

LOCATION.--Lat 38°18'17", long 77°02'31", Hydrologic Unit 02070011, 0.9 mi northeast of the main gate at Tetotum Flats at the Naval Surface Warfare Center, Dahlgren Laboratory, in Dahlgren. Owner: U.S. Department of the Navy.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in. to 7.2 ft, 12.2 to 14.7 ft, depth 14.7 ft, screened 7.2 to 12.2 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

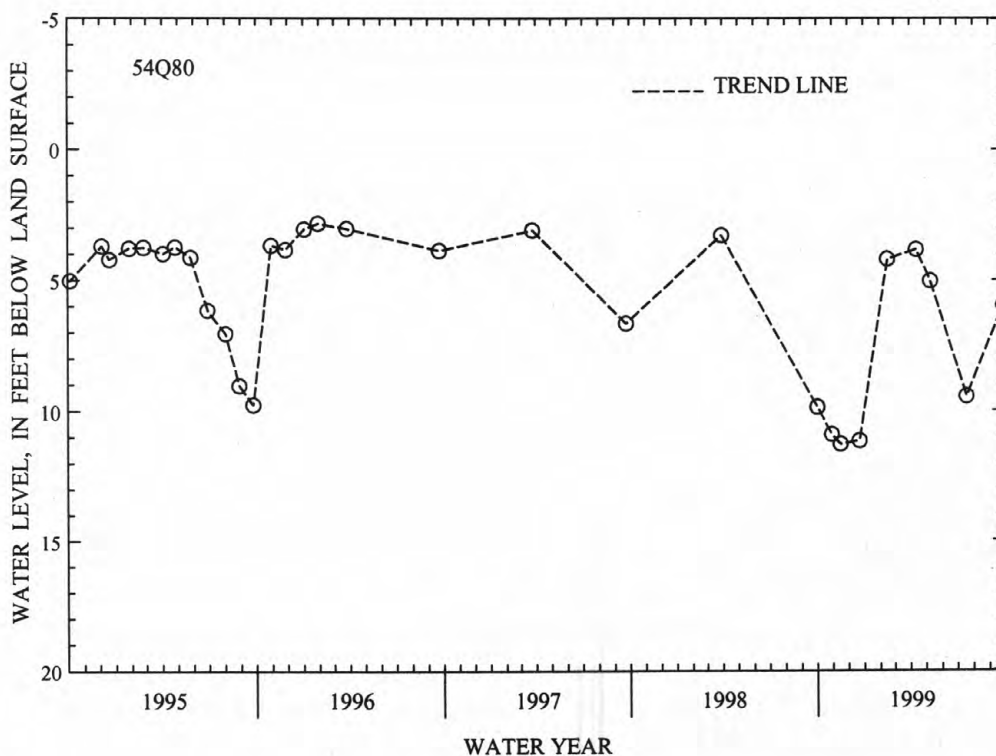
DATUM.--Elevation of land-surface datum is 15.20 ft above sea level. Measuring point: Top of casing, 0.05 ft below land-surface datum prior to Aug. 5, 1998; top of bladder pump cover plate, at land-surface datum thereafter.

PERIOD OF RECORD.--March 1994 to September 1999 (discontinued).

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.79 ft below land-surface datum, Mar. 29, 1994; lowest measured, 11.28 ft below land-surface datum, Nov. 16, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 02	9.86	NOV 16	11.28	FEB 16	4.20	MAY 10	5.03	SEP 29	5.96
30	10.91	DEC 23	11.15	APR 13	3.83	JUL 19	9.46		
WATER YEAR 1999		HIGHEST	3.83	APR 13, 1999					
		LOWEST	11.28	NOV 16, 1998					



GROUND-WATER LEVELS

KING GEORGE COUNTY

381813077020801. Local number, 54Q105.

LOCATION.--Lat 38°18'13", long 77°02'08", Hydrologic Unit 02070011, 0.35 mi southwest of the Potomac River, and 0.7 mi northeast of the main gate at Tetotum Flats at the Naval Surface Warfare Center, Dahlgren Laboratory, in Dahlgren. Owner: U.S. Department of the Navy.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in. depth 15.87 ft, screened 5.97 to 15.42 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

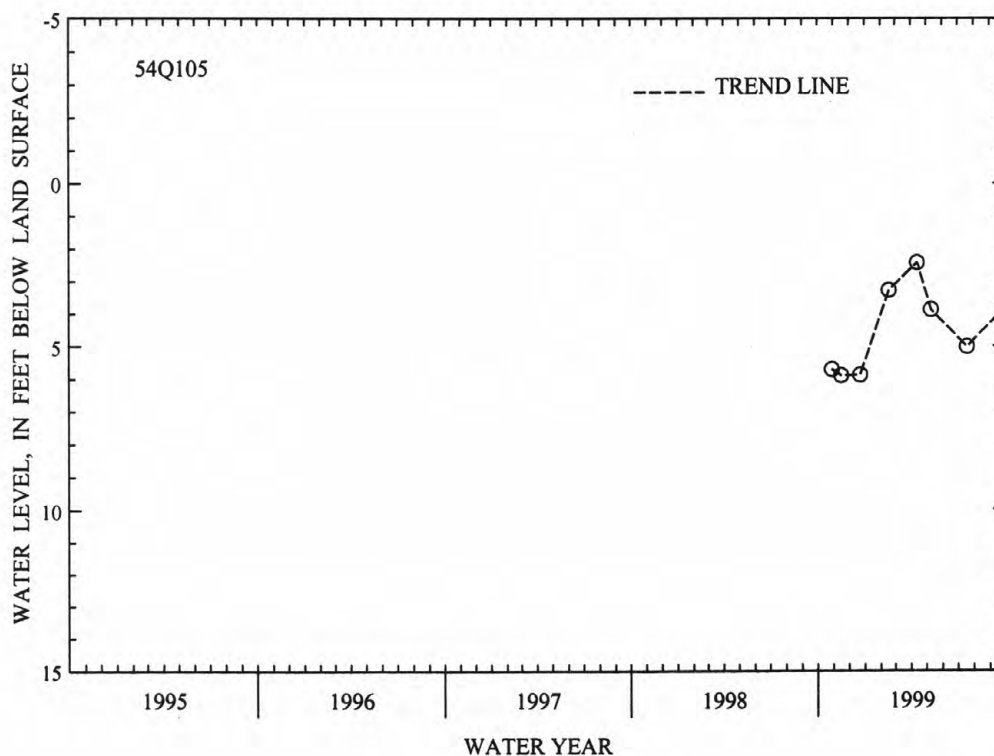
DATUM.--Elevation of land-surface datum is 15.63 ft above sea level. Measuring point: Top of bladder pump cover plate, 1.83 ft above land-surface datum.

PERIOD OF RECORD.--October 1998 to September 1999 (discontinued).

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.42 ft below land-surface datum, Apr. 13, 1999; lowest measured, 5.89 ft below land-surface datum, Nov. 16, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	5.70	DEC 23	5.87	APR 13	2.42	JUL 19	5.01
NOV 16	5.89	FEB 17	3.27	MAY 10	3.87	SEP 29	3.85
WATER YEAR 1999		HIGHEST	2.42	APR 13, 1999			
		LOWEST	5.89	NOV 16, 1998			



GROUND-WATER LEVELS

KING GEORGE COUNTY

381813077020501. Local number, 54Q106.

LOCATION.--Lat 38°18'13", long 77°02'05", Hydrologic unit 02070011, 0.3 mi southwest of Potomac River, and 0.7 mi northeast of the main gate at Tetotum Flats at the Naval Surface Warfare Center, Dahlgren Laboratory, in Dahlgren. Owner: U.S. Department of the Navy.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 15.71 ft, screened 5.81 to 15.26 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 16.18 ft above sea level. Measuring point: Top of bladder pump cover plate, 1.95 ft above land-surface datum.

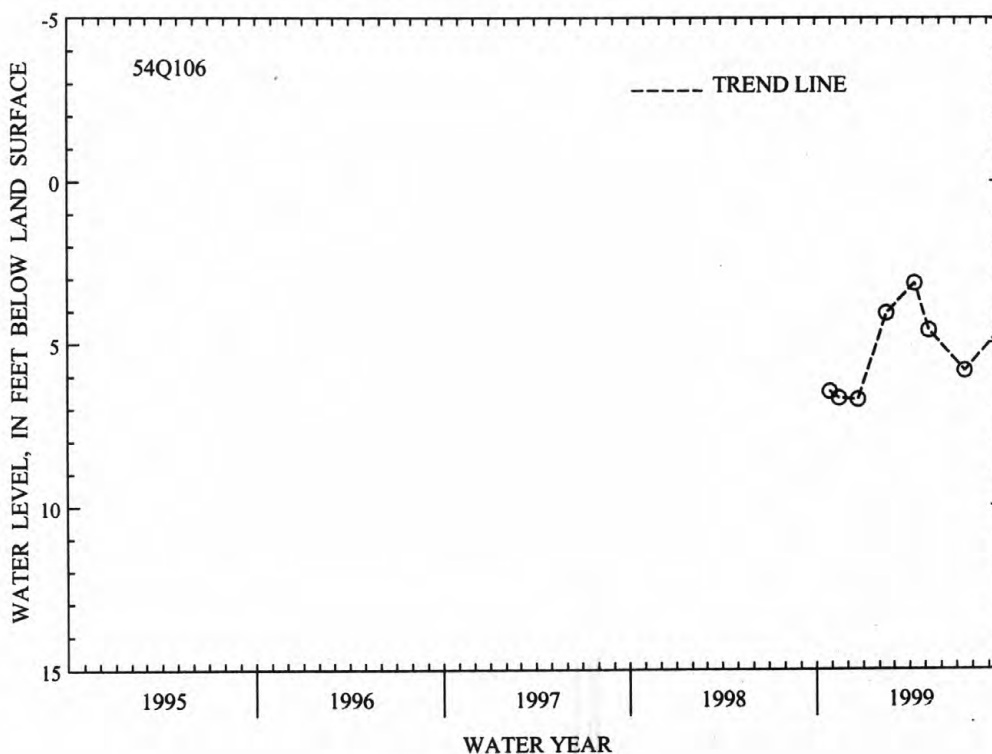
PERIOD OF RECORD.--October 1998 to September 1999 (discontinued).

EXTREMES FOR PERIOD OF RECORD.-- Highest water level measured, 3.15 ft below land-surface datum, Apr. 13, 1999; lowest measured, 6.73 ft below land-surface datum, Dec. 23, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	6.48	DEC 23	6.73	APR 13	3.15	JUL 19	5.85
NOV 16	6.69	FEB 17	4.07	MAY 10	4.60	SEP 29	4.55

WATER YEAR 1999	HIGHEST	3.15	APR 13, 1999
	LOWEST	6.73	DEC 23, 1998



GROUND-WATER LEVELS

KING GEORGE COUNTY

381814077020001. Local number, 54Q107.

LOCATION.--Lat 38°18'14", long 77°02'00", Hydrologic unit 02070011, 0.25 mi southwest of Potomac River, and 0.7 mi northeast of the main gate at Tetotum Flats at the Naval Surface Warfare Center, Dahlgren Laboratory, in Dahlgren. Owner: U.S. Department of the Navy.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 15.73 ft, screened 5.83 to 15.28 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

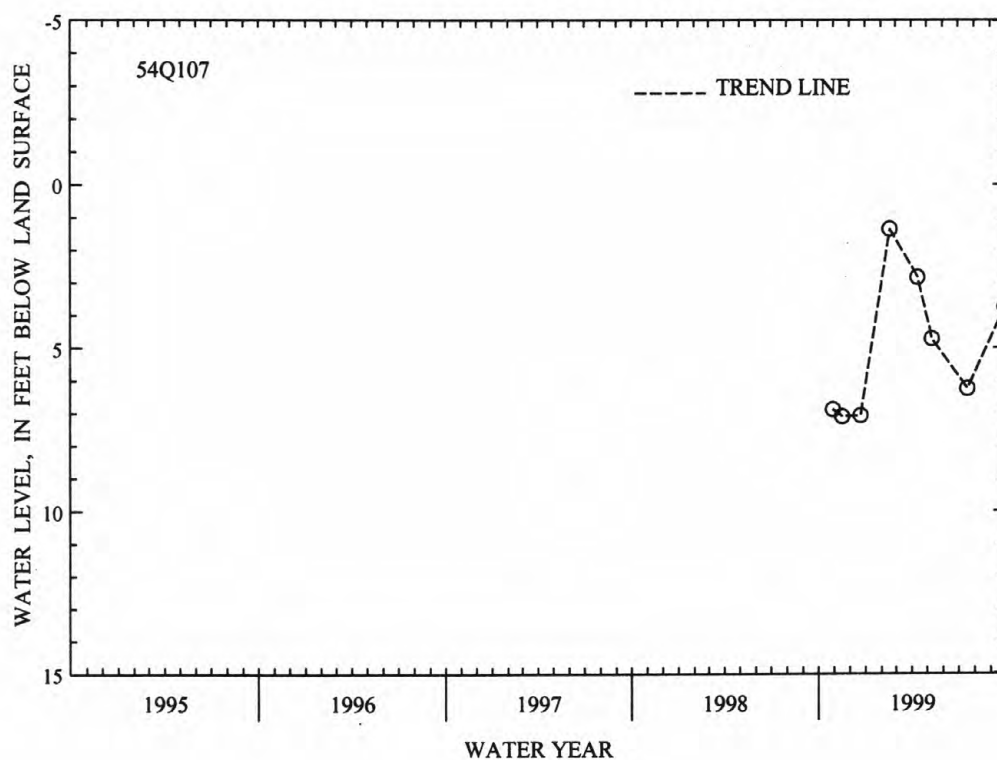
DATUM.--Elevation of land-surface datum is 16.34 ft above sea level. Measuring point: Top of bladder pump cover plate, 1.81 ft above land-surface datum.

PERIOD OF RECORD.--October 1998 to September 1999 (discontinued).

EXTREMES FOR PERIOD OF RECORD.-- Highest water level measured, 1.35 ft below land-surface datum, Feb. 18, 1999; lowest measured, 7.09 ft below land-surface datum, Nov. 17, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	6.88	DEC 23	7.06	APR 13	2.83	JUL 19	6.24
NOV 17	7.09	FEB 18	1.35	MAY 11	4.71	SEP 29	3.74
WATER YEAR 1999		HIGHEST	1.35	FEB 18, 1999			
		LOWEST	7.09	NOV 17, 1998			



GROUND-WATER LEVELS

KING GEORGE COUNTY

381814077015701. Local number, 54Q108.

LOCATION.--Lat 38°18'14", long 77°01'57", Hydrologic unit 02070011, 0.2 mi southwest of Potomac River, and 0.8 mi northeast of the main gate at Tetotum Flats at the Naval Surface Warfare Center, Dahlgren Laboratory, in Dahlgren. Owner: U.S. Department of the Navy.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 16.01 ft, screened 6.11 to 15.56 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 15.70 ft above sea level. Measuring point: Top of bladder pump cover plate, 1.39 ft above land-surface datum.

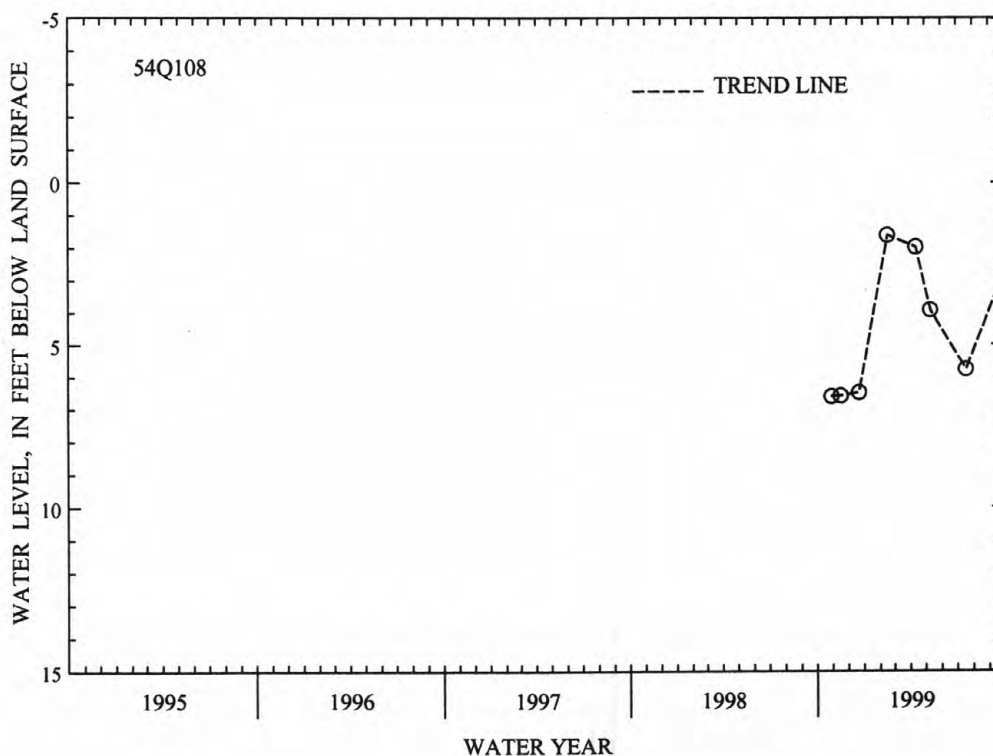
PERIOD OF RECORD.--October 1998 to September 1999 (discontinued).

EXTREMES FOR PERIOD OF RECORD.-- Highest water level measured, 1.61 ft below land-surface datum, Feb. 17, 1999; lowest measured, 6.58 ft below land-surface datum, Nov. 17, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	6.30	DEC 23	6.48	APR 13	1.97	JUL 19	5.76
NOV 17	6.58	FEB 17	1.61	MAY 11	3.91	SEP 29	2.84

WATER YEAR 1999	HIGHEST	1.61	FEB 17, 1999
	LOWEST	6.58	NOV 17, 1998



GROUND-WATER LEVELS

KING GEORGE COUNTY

381817077015602. Local number, 54Q109.

LOCATION.--Lat 38°18'17", long 77°01'56", Hydrologic unit 02070011, 0.2 mi southwest of Potomac River, and 0.65 mi northeast of the main gate at Tetotum Flats at the Naval Surface Warfare Center, Dahlgren Laboratory, in Dahlgren. Owner: U.S. Department of the Navy.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 15.61 ft, screened 5.71 to 15.16 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

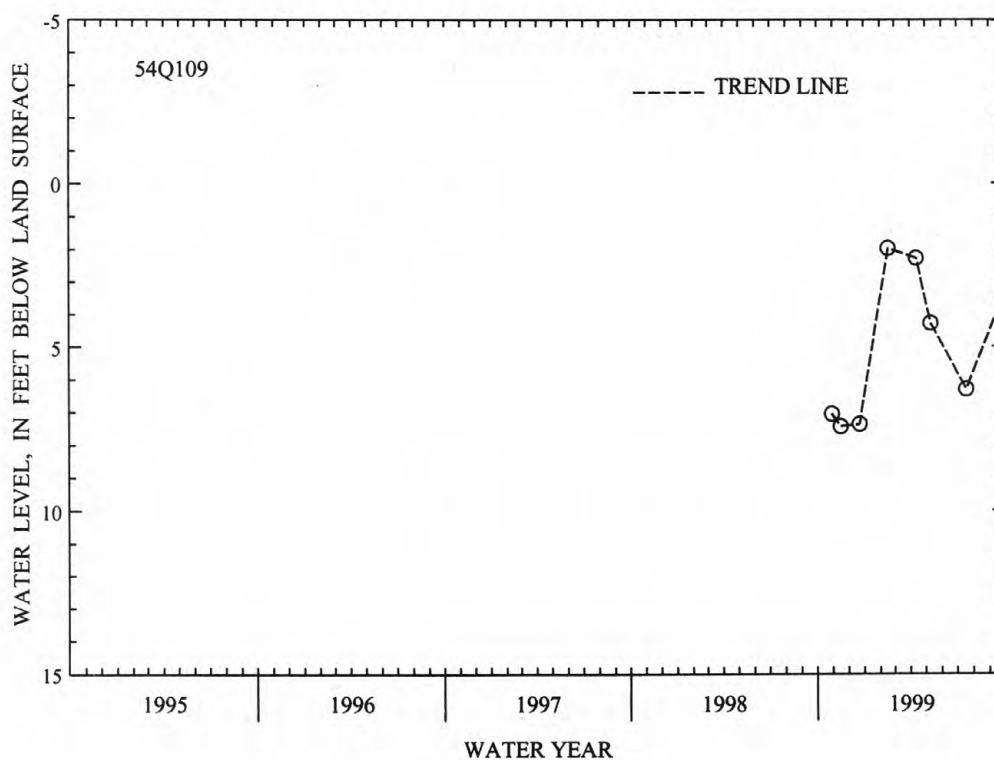
DATUM.--Elevation of land-surface datum is 15.94 ft above sea level. Measuring point: Top of bladder pump cover plate, 1.85 ft above land-surface datum.

PERIOD OF RECORD.--October 1998 to September 1999 (discontinued).

EXTREMES FOR PERIOD OF RECORD.-- Highest water level measured, 1.98 ft below land-surface datum, Feb. 17, 1999; lowest measured, 7.43 ft below land-surface datum, Nov. 16, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	7.05	DEC 23	7.36	APR 13	2.28	JUL 19	6.30
NOV 16	7.43	FEB 17	1.98	MAY 11	4.27	SEP 29	3.43
WATER YEAR 1999		HIGHEST	1.98	FEB 17, 1999			
		LOWEST	7.43	NOV 16, 1998			



GROUND-WATER LEVELS

KING GEORGE COUNTY

381818077020002. Local number, 54Q110.

LOCATION.--Lat 38°18'18", long 77°02'00", Hydrologic unit 02070011, 0.25 mi southwest of Potomac River, and 0.7 mi northeast of the main gate at Tetotum Flats at the Naval Surface Warfare Center, Dahlgren Laboratory, in Dahlgren. Owner: U.S. Department of the Navy.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 15.56 ft, screened 5.66 to 15.11 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

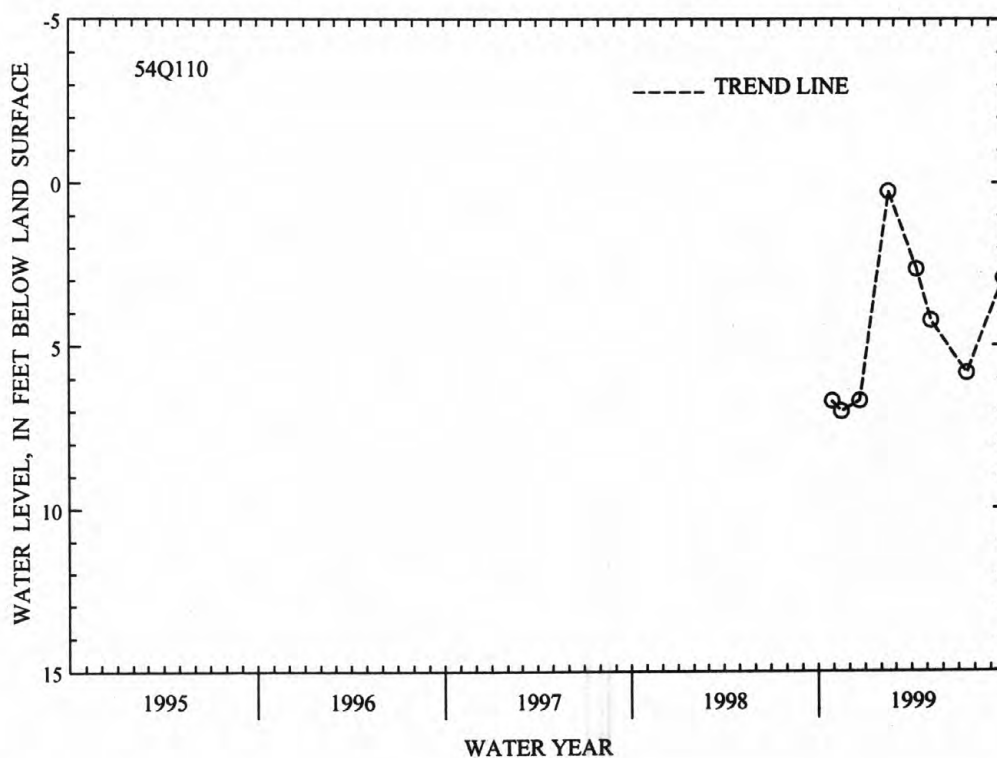
DATUM.--Elevation of land-surface datum is 15.59 ft above sea level. Measuring point: Top of bladder pump cover plate, 1.97 ft above land-surface datum.

PERIOD OF RECORD.--October 1998 to September 1999 (discontinued).

EXTREMES FOR PERIOD OF RECORD.-- Highest water level measured, 0.25 ft below land-surface datum, Feb. 18, 1999; lowest measured, 7.01 ft below land-surface datum, Nov. 17, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 30	6.69	DEC 23	6.68	APR 13	2.65	JUL 19	5.83
NOV 17	7.01	FEB 18	0.25	MAY 11	4.22	SEP 29	2.93
WATER YEAR 1999		HIGHEST	0.25	FEB 18, 1999			
		LOWEST	7.01	NOV 17, 1998			



GROUND-WATER LEVELS

KING GEORGE COUNTY

381815077020701. Local number, 54Q111.

LOCATION.--Lat 38°18'15", long 77°02'07", Hydrologic unit 02070011, 0.3 mi southwest of Potomac River, and 0.7 mi northeast of the main gate at Tetotum Flats at the Naval Surface Warfare Center, Dahlgren Laboratory, in Dahlgren. Owner: U.S. Department of the Navy.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 15.86 ft, screened 5.96 to 15.41 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 16.58 ft above sea level. Measuring point: Top of bladder pump cover plate, 1.83 ft above land-surface datum.

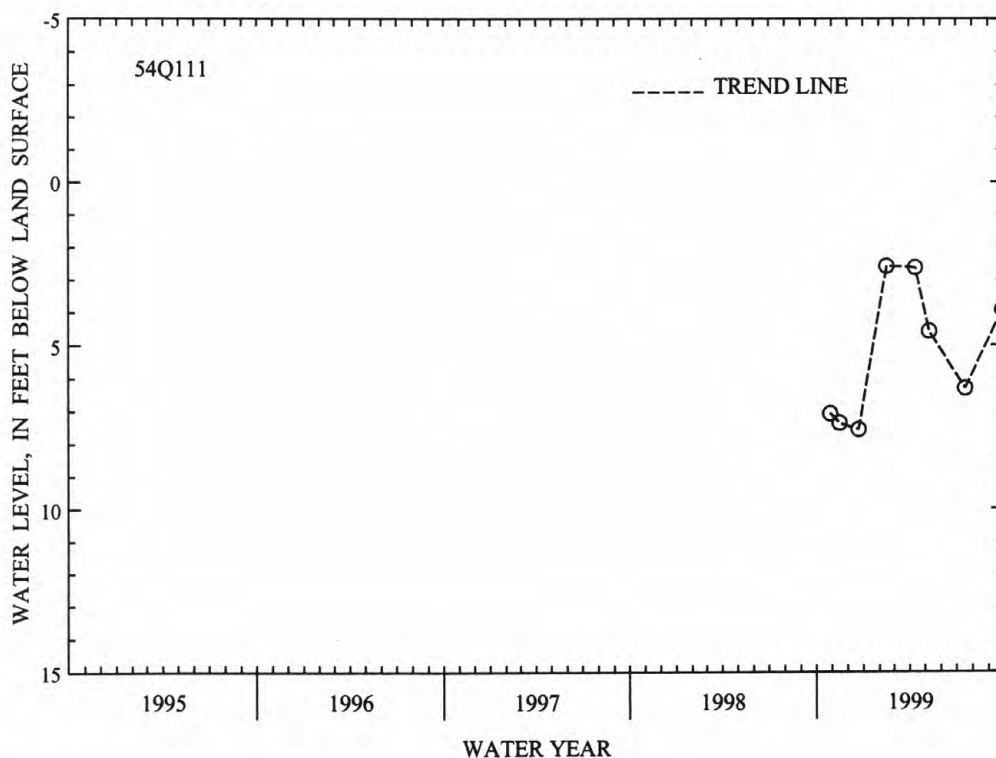
PERIOD OF RECORD.--October 1998 to September 1999 (discontinued).

EXTREMES FOR PERIOD OF RECORD.-- Highest water level measured, 2.59 ft below land-surface datum, Feb. 16, 1999; lowest measured, 7.55 ft below land-surface datum, Dec. 23, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	7.07	DEC 23	7.55	APR 13	2.63	JUL 19	6.29
NOV 16	7.35	FEB 16	2.59	MAY 10	4.57	SEP 29	3.92

WATER YEAR 1999	HIGHEST	2.59	FEB 16, 1999
	LOWEST	7.55	DEC 23, 1998



GROUND-WATER LEVELS

KING GEORGE COUNTY

381815077021301. Local number, 54Q112.

LOCATION.--Lat 38°18'15", long 77°02'13", Hydrologic unit 02070011, 0.4 mi southwest of Potomac River, and 0.65 mi northeast of the main gate at Tetotum Flats at the Naval Surface Warfare Center, Dahlgren Laboratory, in Dahlgren. Owner: U.S. Department of the Navy.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 15.46 ft, screened 5.5 to 15.01 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

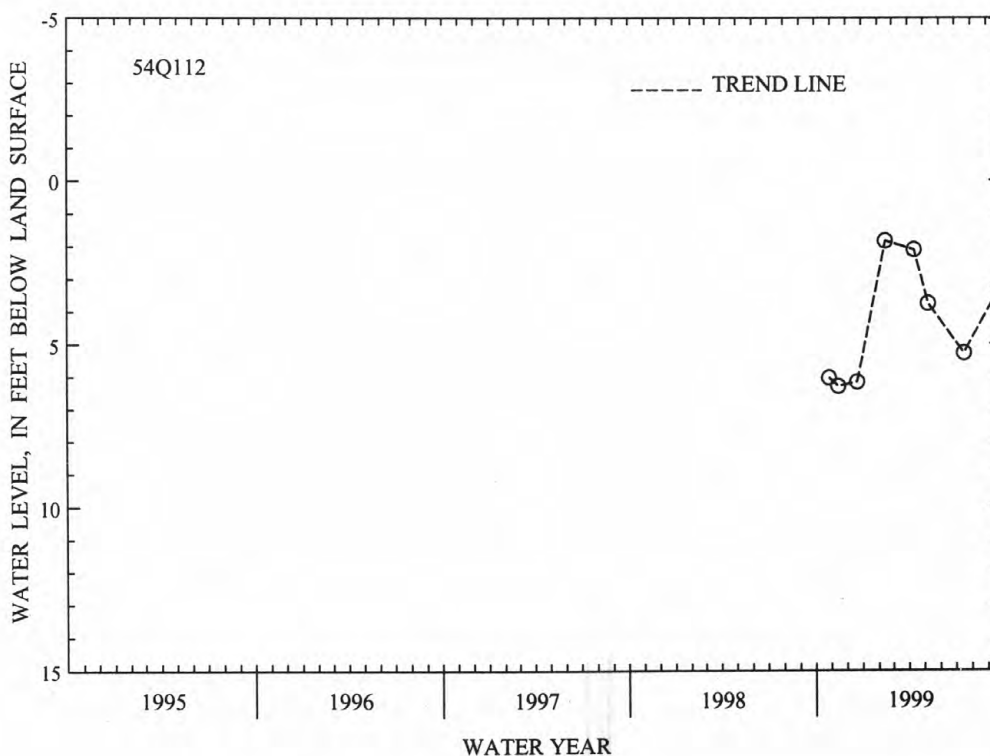
DATUM.--Elevation of land-surface datum is 16.06 ft above sea level. Measuring point: Top of bladder pump cover plate, 2.28 ft above land-surface datum.

PERIOD OF RECORD.--October 1998 to September 1999 (discontinued).

EXTREMES FOR PERIOD OF RECORD.-- Highest water level measured, 1.84 ft below land-surface datum, Feb. 16, 1999; lowest measured, 6.29 ft below land-surface datum, Nov. 16, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	6.03	DEC 23	6.16	APR 13	2.11	JUL 19	5.27
NOV 16	6.29	FEB 16	1.84	MAY 10	3.75	SEP 29	3.20
WATER YEAR 1999		HIGHEST	1.84	FEB 16, 1999			
		LOWEST	6.29	NOV 16, 1998			



GROUND-WATER LEVELS

KING GEORGE COUNTY

382341077032401. Local number, 54R 2.

LOCATION.--Lat 38°23'41", long 77°03'24", Hydrologic Unit 02070011, 50 ft southeast of steep bank of the Potomac River, 150 ft west of State Highway 687, 1.5 mi west of the intersection of U.S. Highway 301 and State Highway 614, 1.9 mi north of the intersection of State Highways 629 and 687, and near Dahlgren. Owner: E. V. Bruchez.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled withdrawal water well, diameter 4 in. to 210 ft, diameter 2 in. from 210 to 806 ft, depth 806 ft, screened 781 to 801 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 70 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum.

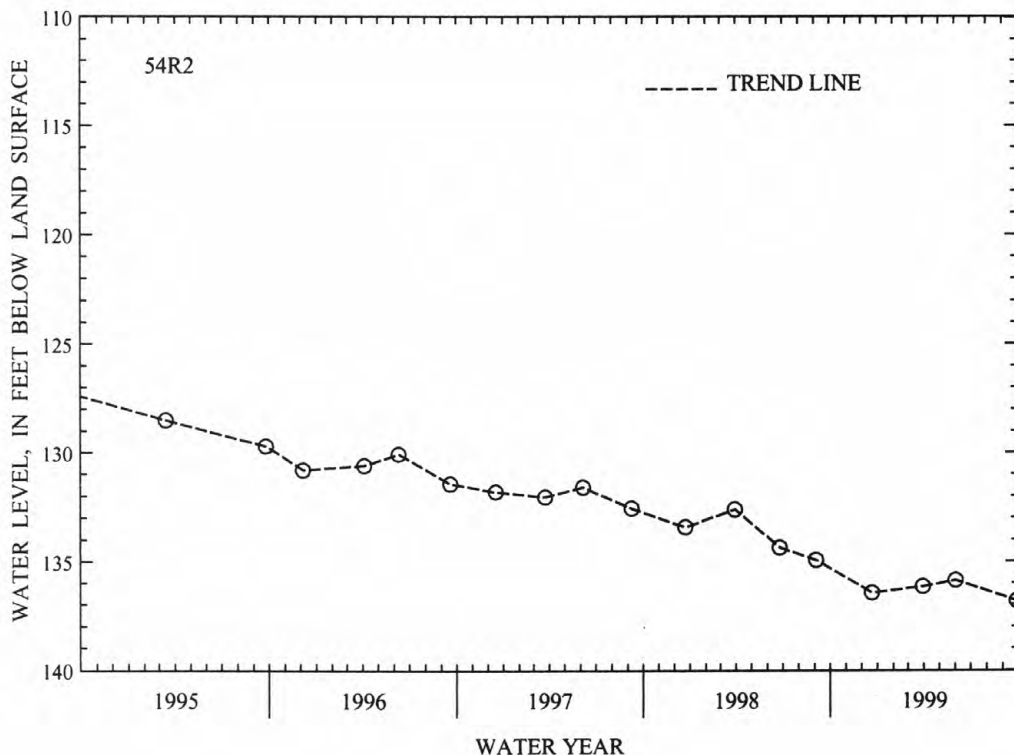
REMARKS.--Water level affected by regional drawdown.

PERIOD OF RECORD.--October 1969 to current year. Unpublished records available prior to October 1988 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 70.00 ft below land-surface datum, Oct. 15, 1969; lowest measured, 136.82 ft below land-surface datum, Sept. 28, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 21	136.45	MAR 30	136.16	JUN 02	135.87	SEP 28	136.82
WATER YEAR 1999	HIGHEST	135.87	JUN 02, 1999				
	LOWEST	136.82	SEP 28, 1999				



GROUND-WATER LEVELS

KING WILLIAM COUNTY

373226076481201. Local number, 56J 2.

LOCATION.--Lat 37°32'26", long 76°48'12", Hydrologic Unit 02080106, 0.1 mi west of State Highway 30, 0.3 mi north of State Highway 33, and in West Point. Owner: St. Laurent Paper Products Corporation (formerly Chesapeake Corporation).

AQUIFER.--Brightseat-upper and middle Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled unused withdrawal water well, diameter 18 in. to 300 ft, diameter 8 in. from 300 to 600 ft, depth 600 ft, screened 390 to 400 ft, 550 to 570 ft, 580 to 600 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 25 ft above sea level, from topographic map. Measuring point: Top of casing, 1.5 ft above land-surface datum.

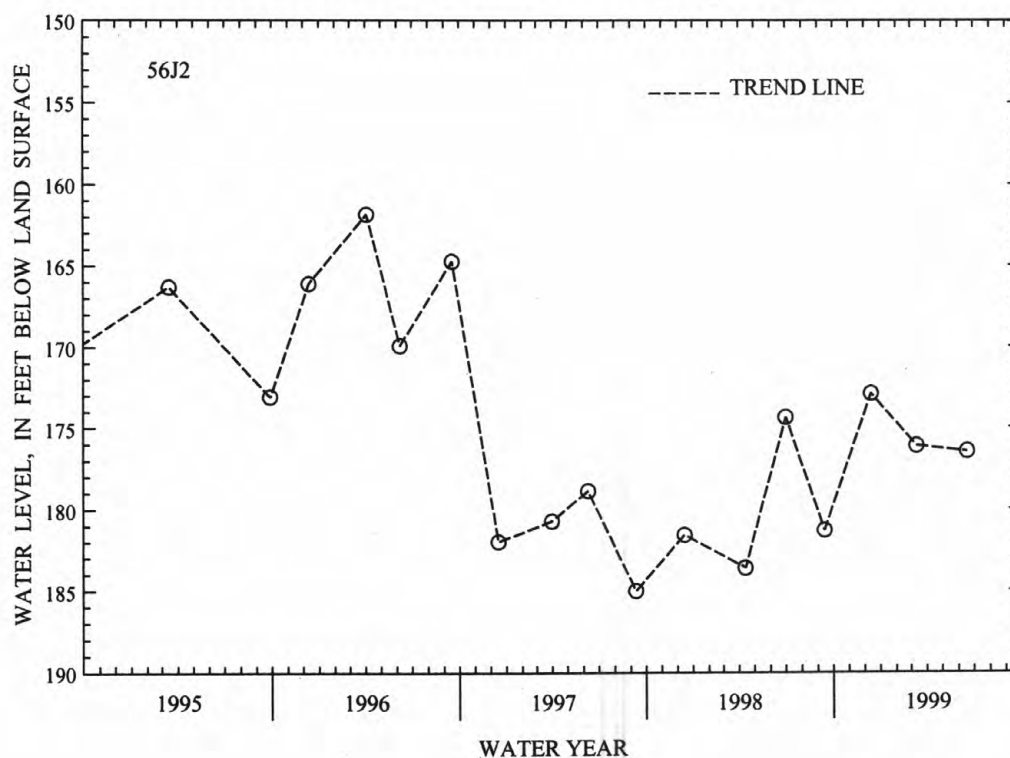
REMARKS.--Water level affected by local pumpage and regional drawdown.

PERIOD OF RECORD.--November 1982 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 141.48 ft below land-surface datum, Feb. 15, 1983; lowest measured, 185.01 ft below land-surface datum, Sept. 11, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
	DEC 14	172.89	MAR 12	176.10	JUN 18	176.45
WATER YEAR 1999	HIGHEST	172.89	DEC 14, 1998			
	LOWEST	176.45	JUN 18, 1999			



GROUND-WATER LEVELS

KING WILLIAM COUNTY

373459076510201. Local number, 56J 10.

LOCATION.--Lat 37°34'59", long 76°51'02", Hydrologic Unit 02080105, 100 ft northeast of State Highway 30 at the Virginia State Police office, 4.2 mi west of the intersection of State Highways 30 and 33 in West Point.
Owner: Virginia Department of State Police.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled withdrawal water well, diameter 4 in., depth 437 ft, screened 417 to 437 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 101 ft above sea level, from topographic map. Measuring point: Top of casing, 1.2 ft below land-surface datum.

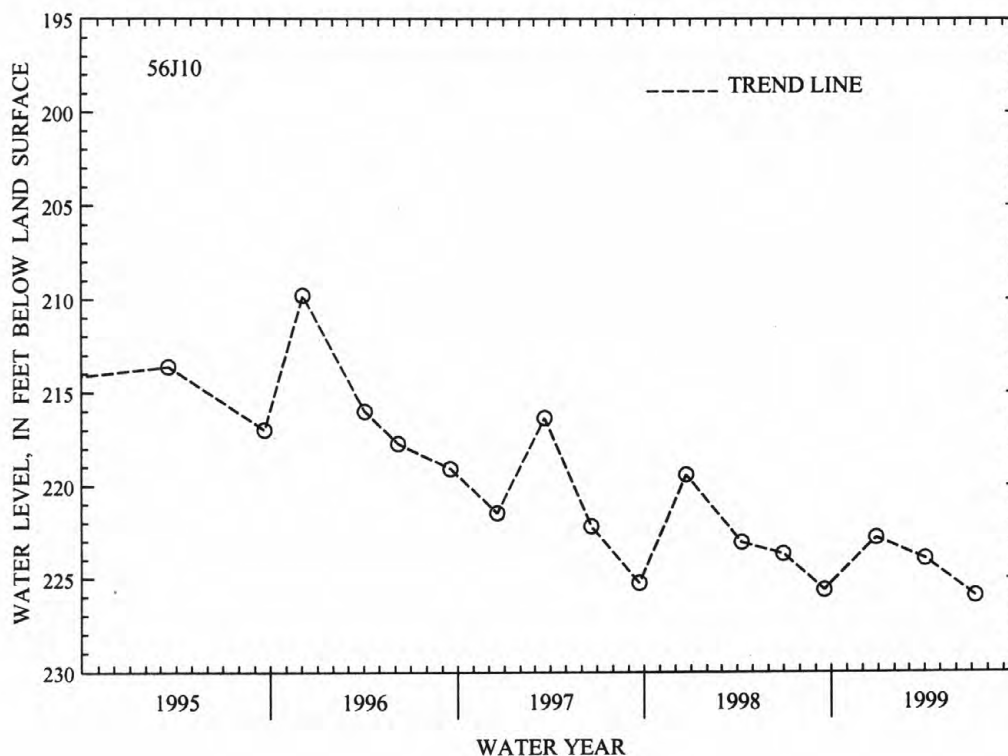
REMARKS.--Water level affected by regional drawdown.

PERIOD OF RECORD.--December 1972, December 1974, October 1983 to current year. Unpublished records available prior to October 1987 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 176.00 ft below land-surface datum, Dec. 8, 1972; lowest measured, 225.93 ft below land-surface datum, July 8, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
	DEC 28	222.80	APR 02	223.93	JUL 08	225.93
WATER YEAR 1999	HIGHEST	222.80	DEC 28, 1998			
	LOWEST	225.93	JUL 08, 1999			



GROUND-WATER LEVELS

LANCASTER COUNTY

374249076230101. Local number, 59K 1 SOW 015.

LOCATION.--Lat 37°42'49", long 76°23'01", Hydrologic Unit 02080104, at Lancaster County High School in Kilmarnock.
Owner: Lancaster County Public Schools.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in. to 163 ft, diameter 2 in. from 163 to 716 ft, depth 716 ft, screened 706 to 716 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 2, 1985, to July 11, 1995, bimonthly measurement with chalked tape. Sept. 30, 1976, to Oct. 1, 1985, occasional measurement with chalked tape. Prior to Sept. 30, 1976, continuous strip-chart recorder.

DATUM.--Elevation of land-surface datum is 85 ft above sea level, from topographic map. Measuring point: Top of casing, at land-surface datum prior to July 29, 1991; 0.75 ft above land-surface datum thereafter.

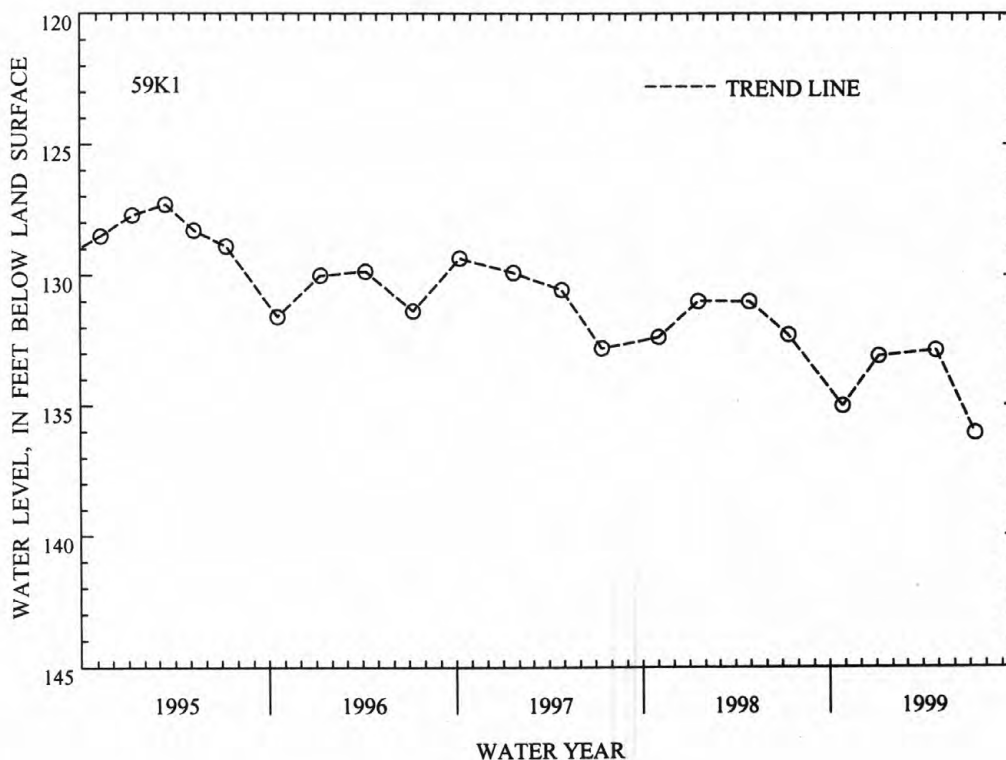
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage and regional drawdown.

PERIOD OF RECORD.--October 1967 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 95.89 ft below land-surface datum, Feb. 20, 1968; lowest measured, 136.07 ft below land-surface datum, July 12, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	135.02	JAN 07	133.10	APR 28	132.88	JUL 12	136.07
WATER YEAR 1999	HIGHEST	132.88	APR 28, 1999				
	LOWEST	136.07	JUL 12, 1999				



GROUND-WATER LEVELS

LANCASTER COUNTY

374142076272701. Local number, 59K 9.

LOCATION.--Lat 37°41'42", long 76°27'27", Hydrologic Unit 02080104, on the south bank of Moran Creek, 1,000 ft northwest of the intersection of State Highway 630 and a private dirt drive, 0.8 mi west of Wesley Church, 3.0 mi north of Weems, 4.0 mi west of Kilmarnock and the intersection of State Highways 629 and 630, and near Weems. Owner: Fred Hansen.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled withdrawal water well, diameter 4 in. to 147 ft, diameter 2 in. from 147 to 585 ft, depth 585 ft, screened 565 to 580 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 10 ft above sea level, from topographic map. Measuring point: Top of casing, 1.2 ft above land-surface datum.

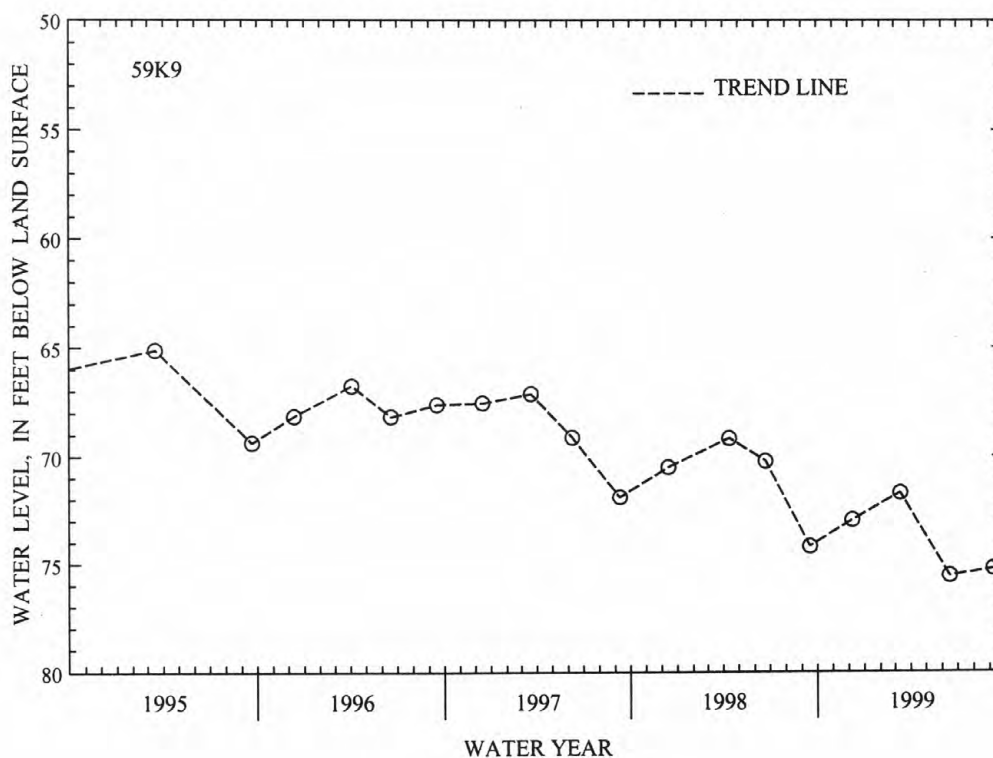
REMARKS.--Water level affected by regional drawdown.

PERIOD OF RECORD.--September 1969 to current year. Unpublished records available prior to October 1988 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 40.00 ft below land-surface datum, Sept. 16, 1969; lowest measured, 75.58 ft below land-surface datum, June 16, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 09	72.97	MAR 12	71.71	JUN 16	75.58	SEP 09	75.25
WATER YEAR 1999	HIGHEST	71.71	MAR 12, 1999				
	LOWEST	75.58	JUN 16, 1999				



GROUND-WATER LEVELS

LOUDOUN COUNTY

391542077423801. Local number, 49Y 1 SOW 022.

LOCATION.--Lat 39°15'42", long 77°42'38", Hydrologic Unit 02070008, 4.2 mi southeast of Harpers Ferry. Owner: American Telephone and Telegraph Company.

AQUIFER.--Bedrock of Precambrian or Cambrian age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6.5 in., depth 516 ft, cased to 45 ft, open hole 45 to 516 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to Oct. 1, 1996, bimonthly measurement with chalked tape. Sept. 30, 1974, to Sept. 30, 1985, occasional measurement with chalked tape. Prior to Sept. 30, 1974, continuous strip-chart recorder.

DATUM.--Elevation of land-surface datum is 1,100 ft above sea level, from topographic map. Measuring point: Top of casing, at land-surface datum.

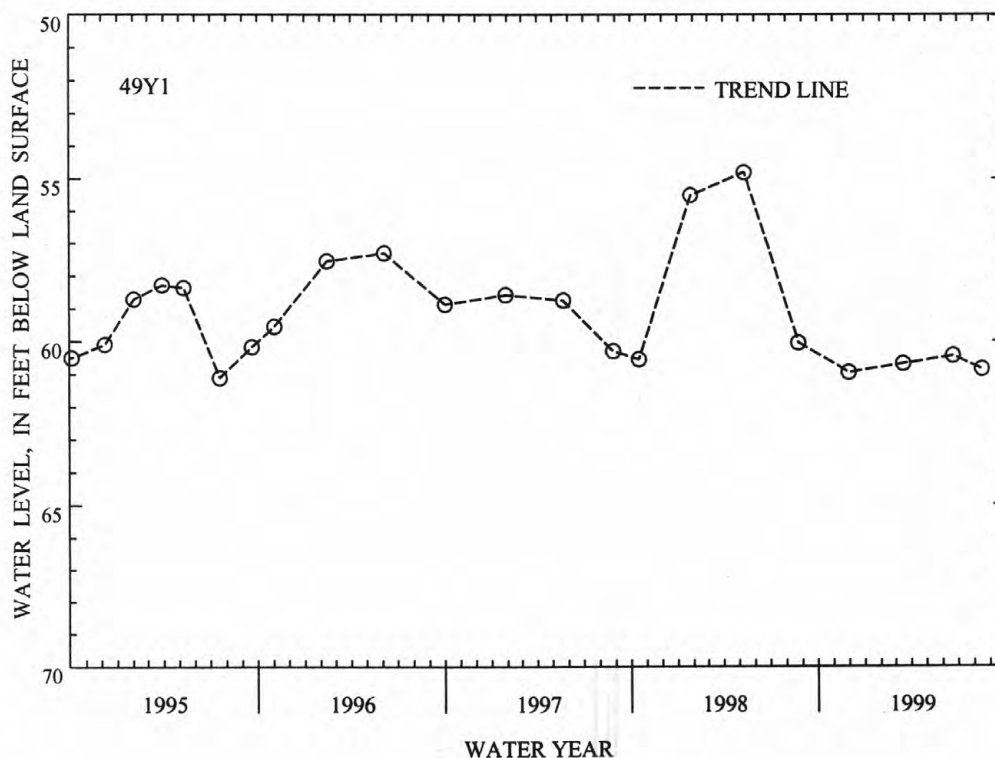
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--August 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 48.00 ft below land-surface datum, June 22, 1972; lowest measured, 61.80 ft below land-surface datum, Dec. 2, 1992.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 01	60.95	MAR 17	60.68	JUN 22	60.44	AUG 17	60.85
WATER YEAR 1999	HIGHEST	60.44	JUN 22, 1999				
	LOWEST	60.95	DEC 01, 1998				



GROUND-WATER LEVELS

LOUDOUN COUNTY

390623077314201. Local number, 50W 4C.

LOCATION.--Lat 39°06'23", long 77°31'42", Hydrologic Unit 02070008, under water tower 500 ft east of State Highway 7, 0.75 mi east of Leesburg. Owner: Town of Leesburg.

AQUIFER.--Slightly metamorphosed Balls Bluff Formation of Late Triassic age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in., depth 535 ft, cased to 6 ft, open hole 6 to 535 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel.

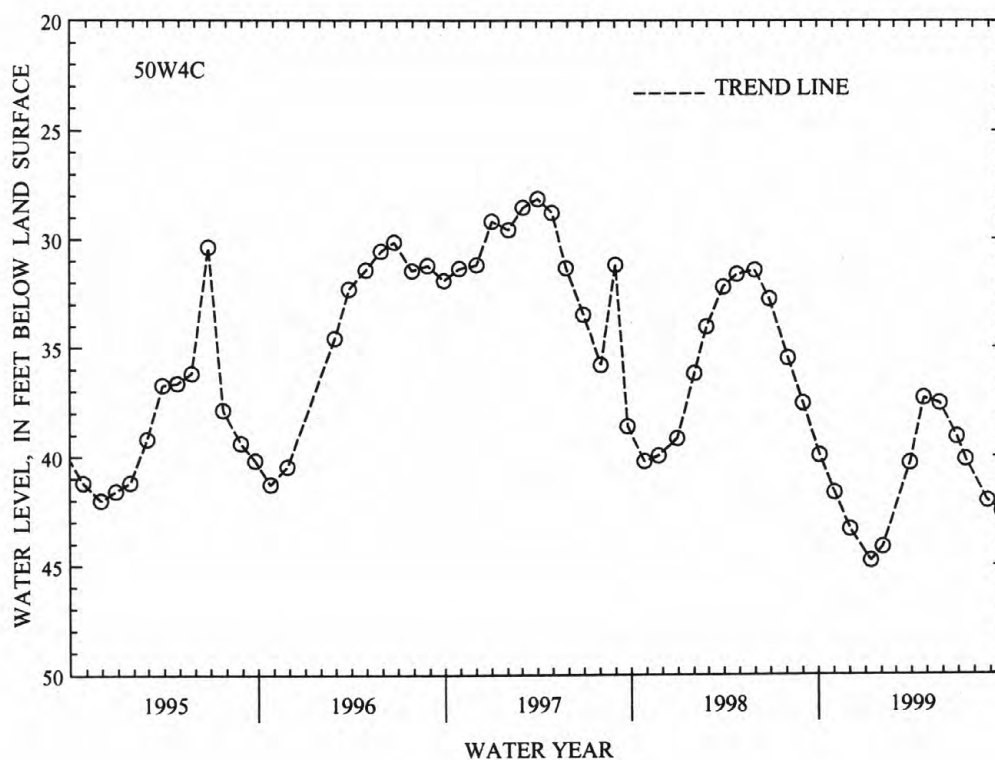
DATUM.--Elevation of land-surface datum is 400 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.

PERIOD OF RECORD.--October 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 28.13 ft below land-surface datum, Apr. 3, 1997; lowest measured, 49.06 ft below land-surface datum, Nov. 27, 1985.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 05	39.92	DEC 03	43.32	FEB 04	44.15	APR 26	37.30	JUN 29	39.08	AUG 27	42.02
NOV 03	41.64	JAN 12	44.78	MAR 30	40.28	MAY 27	37.54	JUL 16	40.11	SEP 24	42.52
WATER YEAR 1999		HIGHEST	37.30	APR 26, 1999							
		LOWEST	44.78	JAN 12, 1999							



GROUND-WATER LEVELS

LOUISA COUNTY

380217078133701. Local number, 45N 1.

LOCATION.--Lat 38°02'17", long 78°13'43", Hydrologic Unit 02080106, off State Highway 640 on Tyler property, 0.9 mi southeast of Thelma, and 3 mi southwest of Boswells Tavern. Owner: Tyler.

AQUIFER.--Metagraywacke, quartzose schist, and melange of Cambrian age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in., depth 56 ft, length of casing unknown.

INSTRUMENTATION.--Continuous strip-chart recorder.

DATUM.--Elevation of land-surface datum is 500 ft above sea level, from topographic map. Measuring point: Top of casing, 1.95 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Missing record due to recorder malfunction.

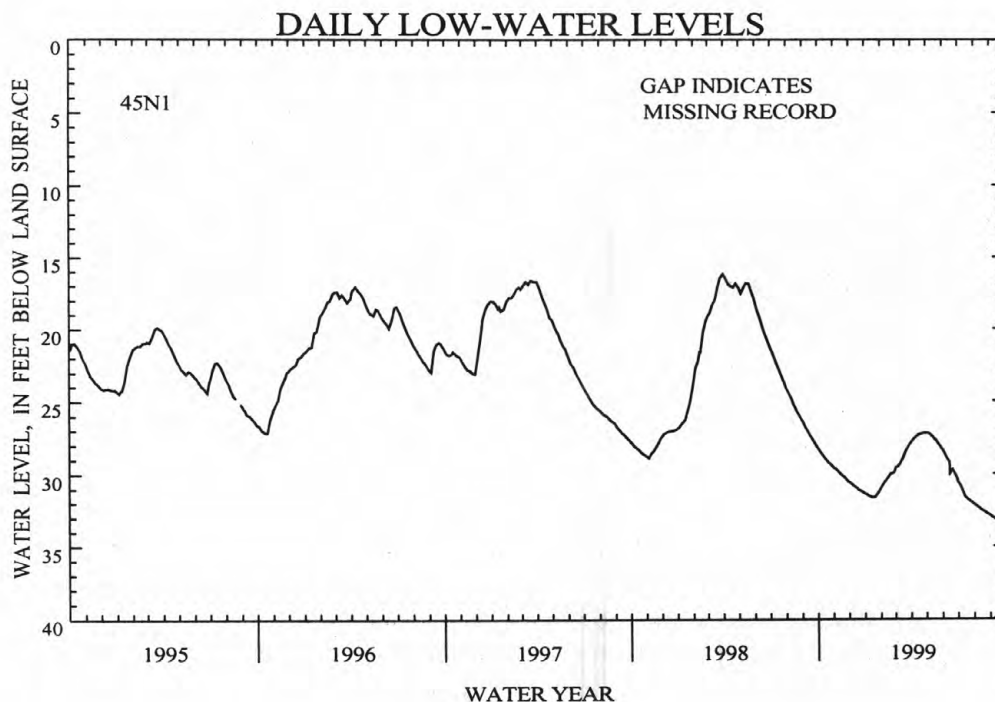
PERIOD OF RECORD.--July 1952 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 10.63 ft below land-surface datum, Apr. 18, 19, 1993;
lowest measured, 35.17 ft below land-surface datum, Dec. 2, 1981.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	28.40	29.67	30.66	31.42	30.75	29.50	27.63	27.22	28.62	30.79	32.20	32.96
10	28.66	29.82	30.80	31.51	30.50	29.30	27.46	27.37	28.97	31.22	32.32	33.09
15	28.90	30.00	30.94	31.58	30.24	28.96	27.30	27.54	29.98	31.58	32.47	33.18
20	29.10	30.18	31.10	31.60	30.00	28.53	27.23	27.73	29.68	31.78	32.57	33.24
25	29.30	30.32	31.20	31.37	29.93	28.22	27.20	27.98	30.04	31.89	32.70	33.34
EOM	29.51	30.54	31.33	31.06	29.79	27.91	27.19	28.29	30.47	32.05	32.83	33.44

WATER YEAR 1999	HIGHEST INSTANTANEOUS	27.11	APR 26, 27, 1999
	LOWEST INSTANTANEOUS	33.40	SEP 30, 1999



GROUND-WATER LEVELS

LOUISA COUNTY

380043078111301. Local number, 45N 4.

LOCATION.--Lat 38°00'45", long 78°11'14", Hydrologic Unit 02080106, 0.25 mi east of U.S. Highway 15, 4.1 mi south of Boswells Tavern. Owner: Virginia Department of Corrections.

AQUIFER.--Metamorphosed sedimentary and volcanic rocks of unknown age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in., depth 200 ft, cased to 42 ft, open hole 42 to 200 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

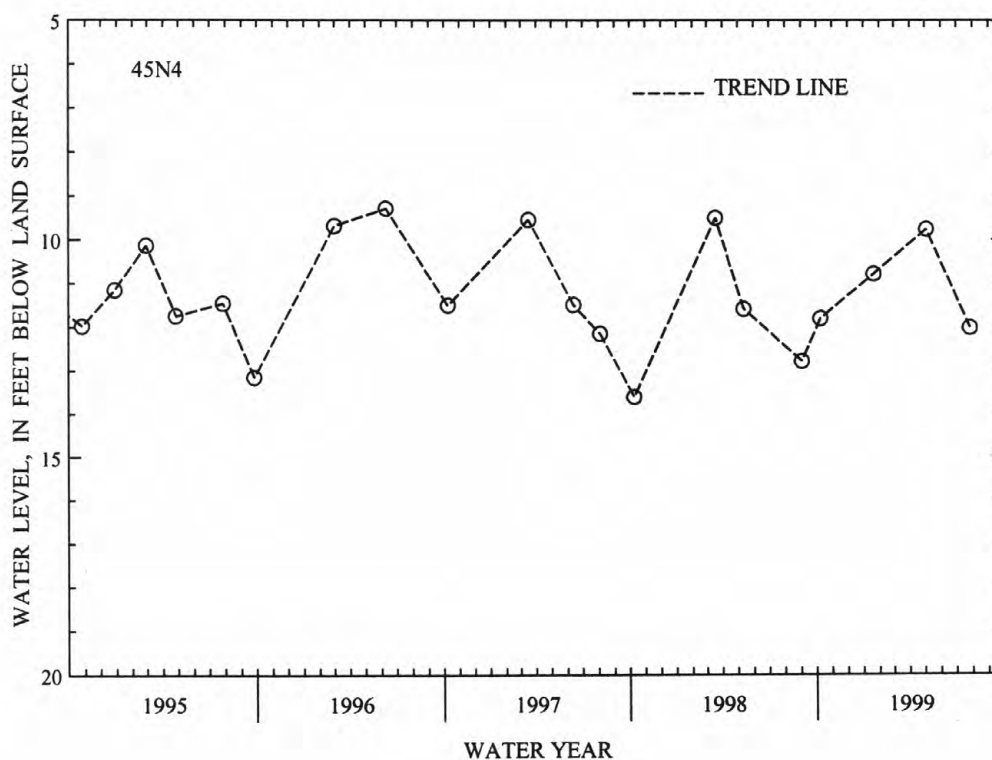
DATUM.--Elevation of land-surface datum is 415 ft above sea level, from topographic map. Measuring point: Top of casing, 2.3 ft above land-surface datum.

PERIOD OF RECORD.--February 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 9.28 ft below land-surface datum, June 10, 1996; lowest measured, 14.43 ft below land-surface datum, Aug. 26, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 09	11.80	JAN 21	10.78	MAY 03	9.76	JUL 27	12.01
WATER YEAR 1999	HIGHEST	9.76	MAY 03, 1999				
	LOWEST	12.01	JUL 27, 1999				



GROUND-WATER LEVELS

LOUISA COUNTY

380131078001001. Local number, 46N 1 SOW 056.

LOCATION.--Lat 38°01'31", long 78°00'10", Hydrologic Unit 02080106, 200 ft northeast of intersection of U.S. Highway 33 and State Highway 208 in Louisa. Owner: Town of Louisa.

AQUIFER.--Metamorphosed sedimentary and volcanic rocks of unknown age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in., depth 132 ft, length of casing unknown.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 4, 1985, to Sept. 30, 1993, bimonthly measurement with chalked tape. Mar. 31, 1979, to Oct. 4, 1985, occasional measurement with chalked tape. Prior to Mar. 31, 1979, continuous strip-chart recorder.

DATUM.--Elevation of land-surface datum is 455 ft above sea level, from topographic map. Measuring point: Top of casing, 0.6 ft above land-surface datum.

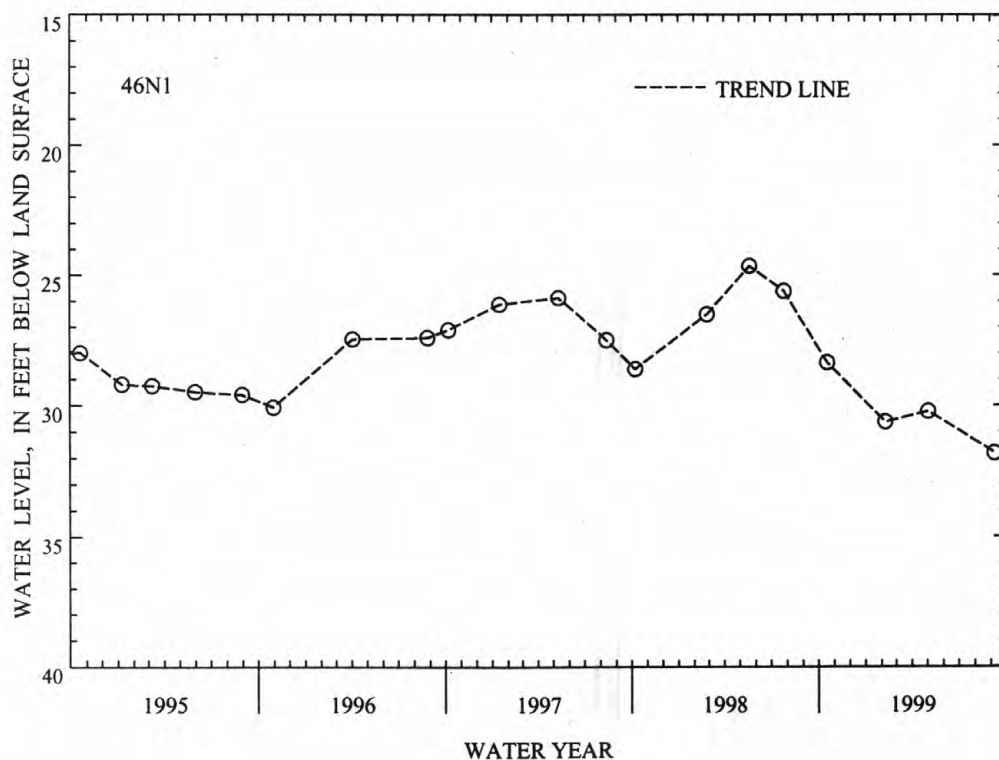
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--March 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 24.65 ft below land-surface datum, May 21, 1998; lowest measured, 34.78 ft below land-surface datum, Dec. 8, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	28.35	FEB 09	30.62	MAY 03	30.22	SEP 09	31.80
WATER YEAR 1999		HIGHEST	28.35	OCT 19, 1998			
		LOWEST	31.80	SEP 09, 1999			



GROUND-WATER LEVELS

MATHEWS COUNTY

372545076240101. Local number, 59H 1.

LOCATION.--Lat 37°25'45", long 76°24'01", Hydrologic Unit 02080102, 0.5 mi south of the intersection of State Highway 617 and private dirt road at the shore line of Greenmansion Cove at North and 0.7 mi southeast of the intersection of State Highways 14 and 617. Owner: G. T. Abernathy.

AQUIFER.--Aquia aquifer of Paleocene age.

WELL CHARACTERISTICS.--Drilled flowing water well, diameter 4 in., depth 568 ft, depth of screen unknown.

INSTRUMENTATION.--Occasional measurement with manometer by USGS personnel.

DATUM.--Elevation of land-surface datum is 5 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.

PERIOD OF RECORD.--January 1950 to December 1995, September 1997 to current year. Unpublished records available prior to October 1988 in files of the Geological Survey.

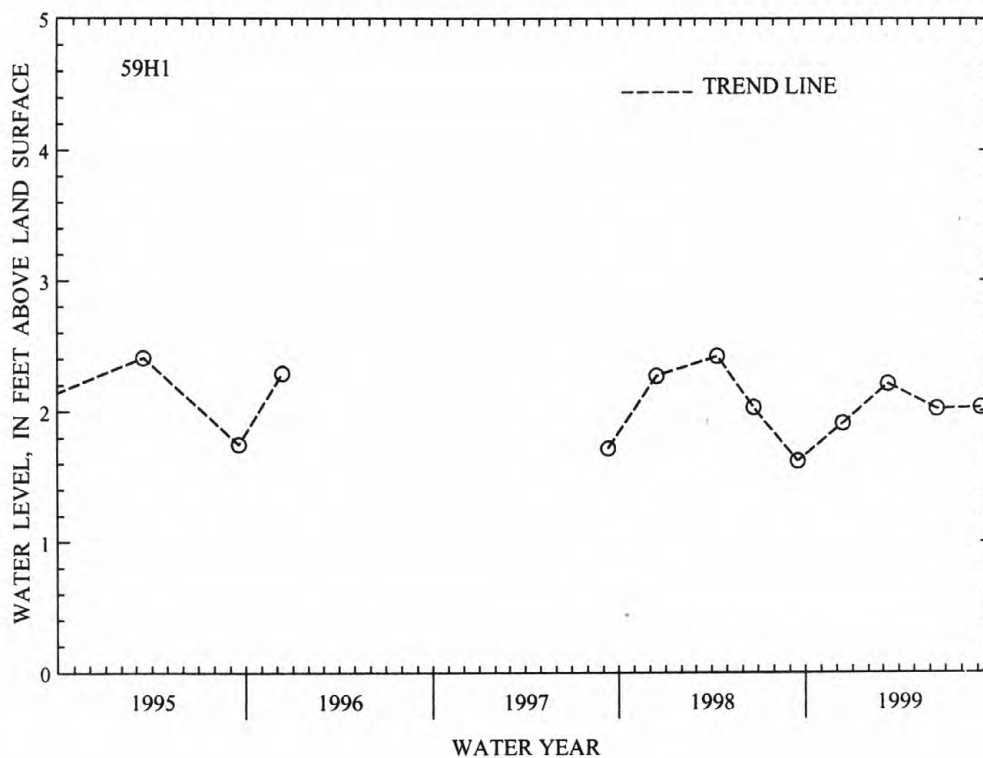
EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.70 ft above land-surface datum, Feb. 12, 1980; lowest measured, 1.00 ft above land-surface datum, Jan. 1, 1950.

WATER LEVEL, IN FEET ABOVE LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 14	1.91	MAR 12	2.21	JUN 15	2.02	SEP 09	2.03

WATER YEAR 1999	HIGHEST	2.21	MAR 12, 1999
	LOWEST	1.91	DEC 14, 1998

Note.--Flowing well; readings are above land-surface datum.



GROUND-WATER LEVELS
MONTGOMERY COUNTY

370812080261901. Local number, 27F 2 SOW 019.

LOCATION.--Lat 37°08'12", long 80°26'19", Hydrologic Unit 05050001, off entrance road to Round Meadow Country Club, 400 ft north of State Highway 661, and 0.5 mi west of Christiansburg. Owner: Town of Christiansburg.

AQUIFER.--Beekmantown Formation of Early Ordovician age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 10 in., depth 450 ft, length of casing unknown.

INSTRUMENTATION.--Continuous strip-chart recorder. Prior to Apr. 5, 1969, one measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 1,970 ft above sea level, from topographic map. Measuring point: Top of casing, 1.5 ft below land-surface datum prior to May 1, 1990; 0.43 ft above land-surface datum thereafter.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Lowest recorded water level, 7.39 ft, is a result of the Mexico earthquake of Sept. 19, 1985, but is not shown as the minimum of record since it is an earthquake-induced measurement. Prior to May 1, 1990, brief periods when water flowed over top of casing. Missing record due to recorder malfunction.

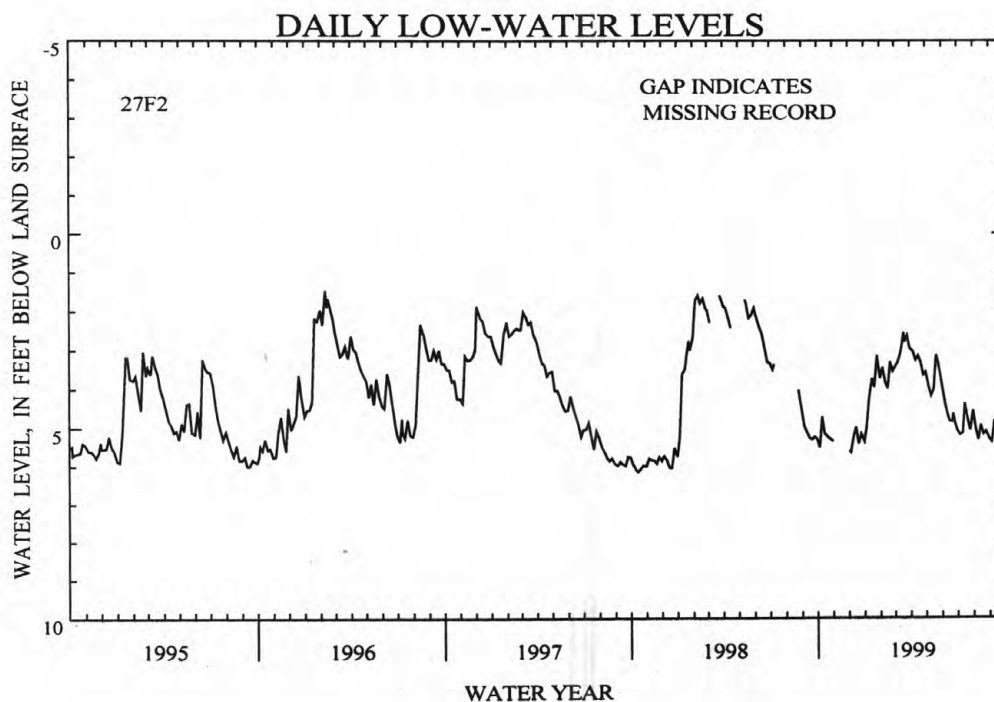
PERIOD OF RECORD.--July 1953, April 1969 to current year. Unpublished record available July 1953 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.02 ft above land-surface datum, Mar. 28, 1993;
lowest recorded, 7.30 ft below land-surface datum, Dec. 5, 1969.

WATER LEVEL, IN FEET BELOW LAND SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	5.52	---	5.66	4.98	3.46	3.36	3.05	3.94	4.27	5.20	5.02	5.38
10	4.73	5.42	5.25	4.22	3.82	3.18	3.27	4.18	4.64	5.16	5.33	4.82
15	5.18	---	5.00	3.74	4.00	2.86	3.16	4.02	4.83	4.38	4.94	5.09
20	5.23	---	5.43	3.96	3.31	2.80	3.33	3.14	4.85	4.79	5.19	5.25
25	5.30	---	5.18	3.15	3.56	2.64	3.65	3.41	4.87	5.08	5.11	5.32
EOM	5.36	---	5.37	3.73	3.48	2.97	3.58	3.87	5.07	4.56	5.30	4.82

WATER YEAR 1999	HIGHEST INSTANTANEOUS	2.25	MAR 21, 1999
	LOWEST INSTANTANEOUS	5.66	DEC 05, 1998



GROUND-WATER LEVELS

NEW KENT COUNTY

373111077104601. Local number, 53J 6.

LOCATION.--Lat 37°31'11", long 77°10'46", Hydrologic Unit 02080206, 0.18 mi south of State Highway 249 in Brookwood Manor Subdivision, 0.7 mi northeast of the intersection of Interstate Highway 64 and State Highway 249, and 2.95 mi southwest of Quinton. Owner: Thomas M. Brooks.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled withdrawal water well, diameter 6 in., depth 305 ft, screened 285 to 305 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 115 ft above sea level, from topographic map. Measuring point: Top of casing, 1.3 ft above land-surface datum.

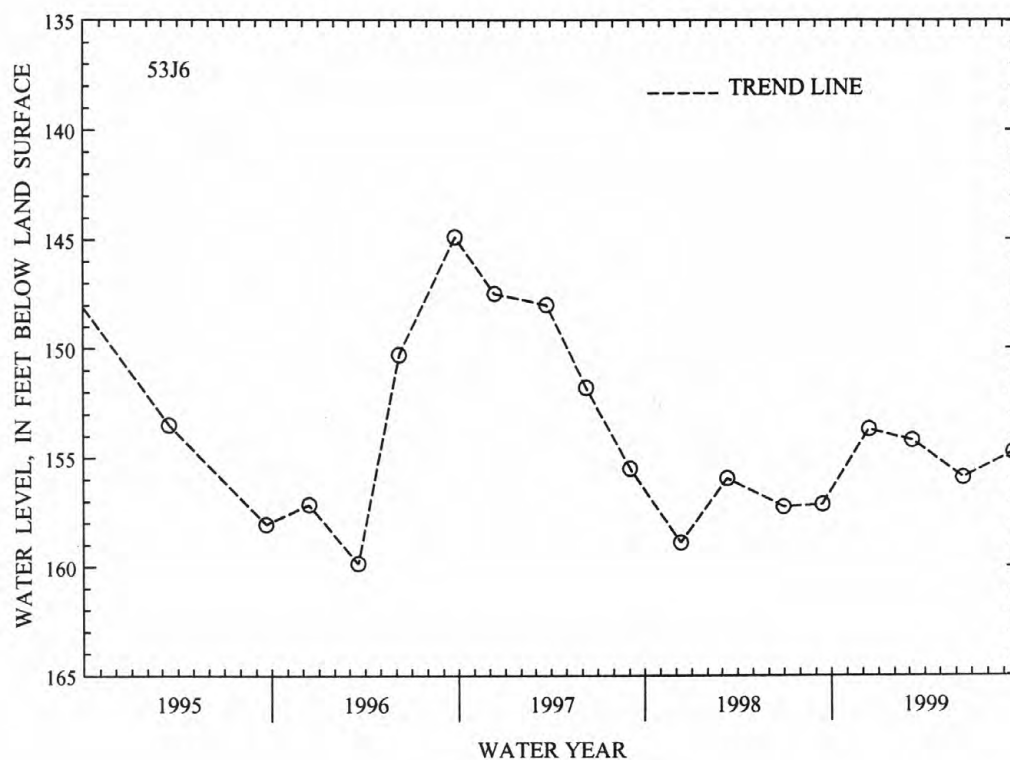
REMARKS.--Water level affected by regional drawdown.

PERIOD OF RECORD.--November 1983 to current year. Unpublished records available prior to October 1987 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 129.91 ft below land-surface datum, Feb. 3, 1984; lowest measured, 159.86 ft below land-surface datum, Mar. 18, 1996.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 14	153.69	MAR 08	154.20	JUN 15	155.91	SEP 21	154.75
WATER YEAR 1999	HIGHEST	153.69	DEC 14, 1998				
	LOWEST	155.91	JUN 15, 1999				



GROUND-WATER LEVELS

NEW KENT COUNTY

373024076542201. Local number, 55J 6.

LOCATION.--Lat 37°30'24", long 76°54'22", Hydrologic Unit 02080106, 0.25 mi north of State Highway 249, 4.3 mi east of New Kent Courthouse. Owner: Chad Brunskole.

AQUIFER.--Aquia aquifer of Paleocene age.

WELL CHARACTERISTICS.--Drilled withdrawal water well, diameter 4 in., depth 275 ft, screened 265 to 275 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 110 ft above sea level, from topographic map. Measuring point: Top of casing, 1.38 ft above land-surface datum.

REMARKS.--Water level affected by regional drawdown.

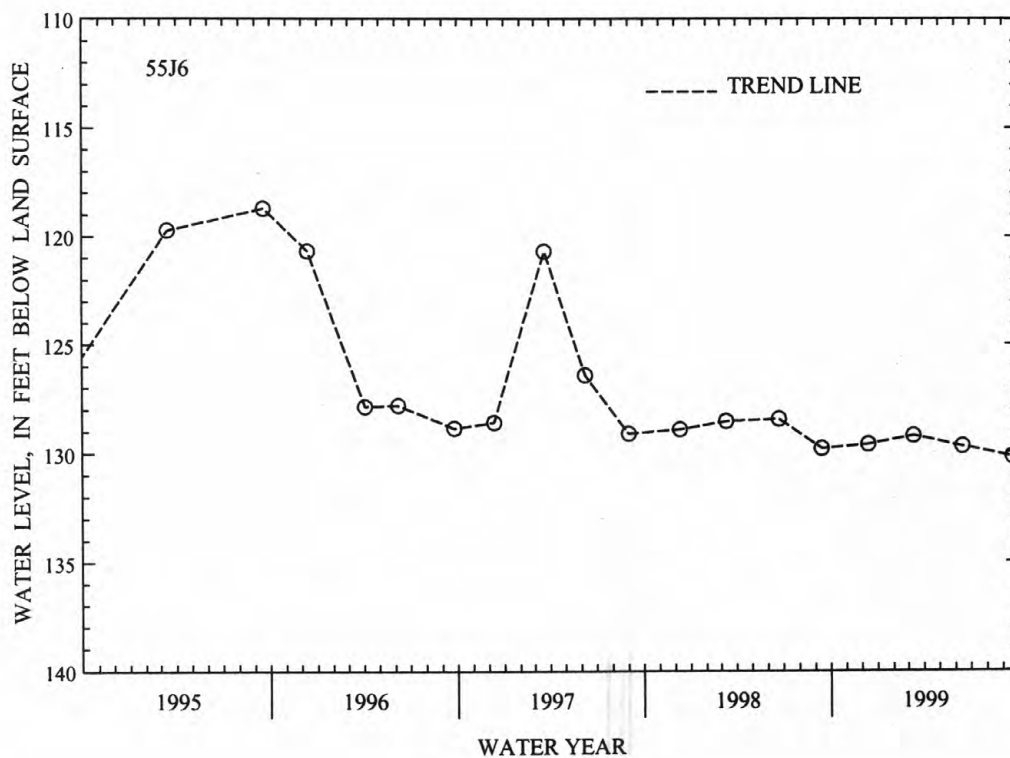
PERIOD OF RECORD.--December 1972, April 1984 to March 1986, March 1988 to current year. Unpublished records available prior to October 1987 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 114.10 ft below land-surface datum, Dec. 7, 1972; lowest measured, 130.18 ft below land-surface datum, Sept. 21, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 14	129.61	MAR 12	129.21	JUN 15	129.70	SEP 21	130.18

WATER YEAR 1999	HIGHEST	129.21	MAR 12, 1999
LOWEST	130.18	SEP 21, 1999	



GROUND-WATER LEVELS

CITY OF NEWPORT NEWS

371027076335601. Local number, 58F 1 SOW 002.

LOCATION.--Lat 37°10'27", long 76°33'56", Hydrologic Unit 02080206, on shore of Lee Hall Reservoir, 0.15 mi north of intersection of State Highway 105 and U.S. Highway 60, and 0.65 mi northeast of Fort Eustis in Newport News. Owner: City of Newport News.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 10 in. to 431.3 ft, diameter 8 in. from 431.3 to 443 ft, diameter 6 in. from 443 to 497 ft, depth 497 ft, screened 476 to 493 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 10, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 20 ft above sea level, from topographic map. Measuring point: Top of recorder shelf, 2.3 ft above land-surface datum.

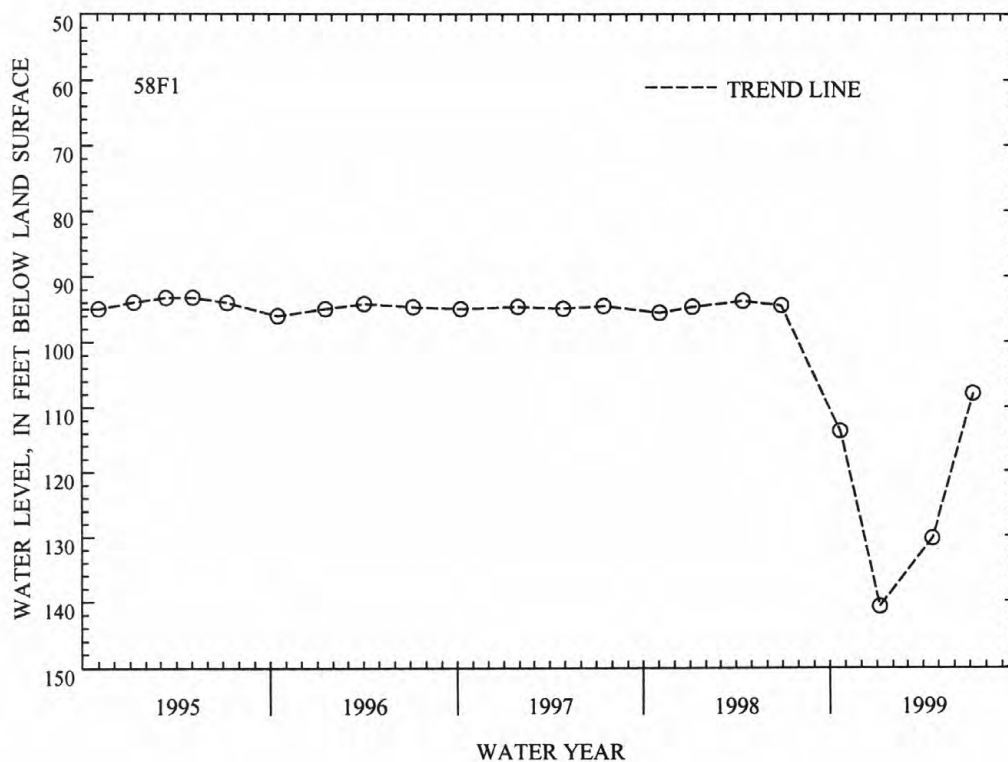
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown and pumpage. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

PERIOD OF RECORD.--January 1968 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 54.76 ft below land-surface datum, May 10, 1969; lowest measured, 140.75 ft below land-surface datum, Jan. 6, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	113.72	JAN 06	140.75	APR 19	130.35	JUL 08	107.88
WATER YEAR 1999	HIGHEST	107.88	JUL 08, 1999				
	LOWEST	140.75	JAN 06, 1999				



GROUND-WATER LEVELS

CITY OF NEWPORT NEWS

371208076341101. Local number, 58F 50 SOW 171A.

LOCATION.--Lat 37°12'08", long 76°34'11", Hydrologic Unit 02080206, 0.4 mi southeast of the intersection of State Highways 143 and 238 and 150 ft north of State Highway 143 in the city of Newport News. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Lower Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 1,236 ft, screened 1,205 to 1,215 ft.

INSTRUMENTATION.--Electronic pressure transducer data logger--60 minute-record interval. Prior to May 8, 1997, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 55 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum prior to Apr. 14, 1993; 1.85 ft thereafter.

REMARKS.--Missing record due to recorder malfunction. Water level affected by regional drawdown, nearby pumpage, and occasional pumpage for water-quality sampling. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

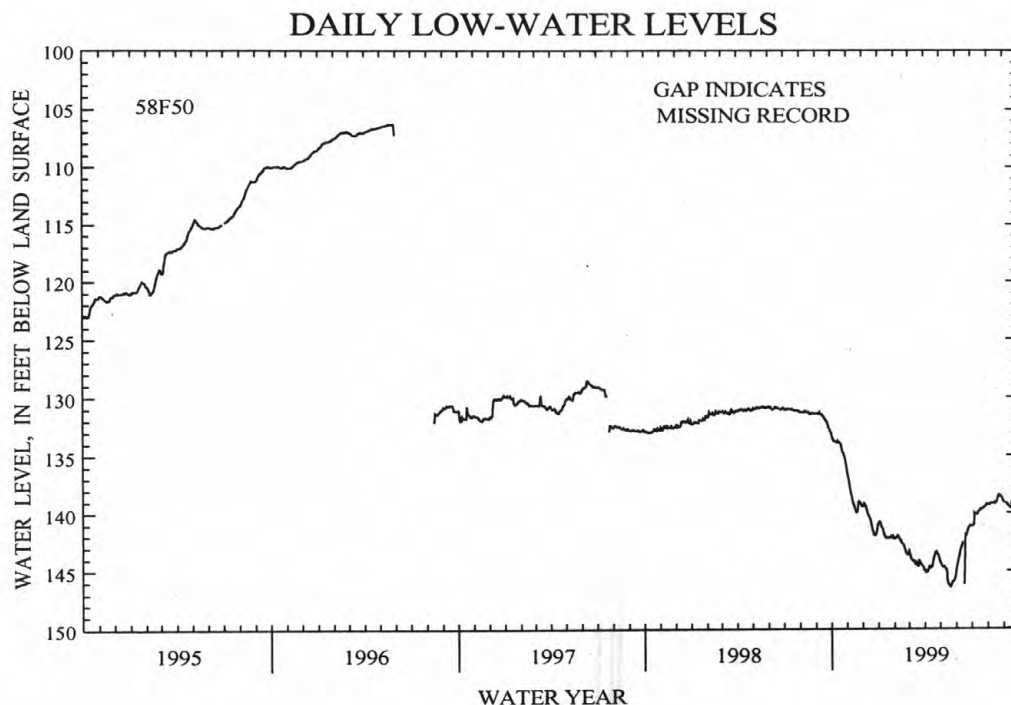
PERIOD OF RECORD.--July 1984 to current year. Unpublished records available prior to October 1986 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 106.32 ft below land-surface datum, May 23-27, 1996, 1995; lowest recorded, 146.42 ft below land-surface datum, May 21, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999 LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	133.69	137.39	139.20	140.93	142.08	143.94	145.08	144.66	143.98	140.99	139.26	139.11
10	133.80	138.59	139.89	141.59	142.18	144.09	144.71	144.72	142.98	140.13	139.16	139.30
15	133.84	139.47	140.50	142.12	142.63	144.32	144.59	146.04	---	139.85	139.06	139.57
20	134.16	139.94	141.43	142.16	142.95	144.17	143.54	146.41	141.93	139.62	138.80	139.36
25	134.78	139.03	141.93	142.04	143.50	144.44	143.55	145.94	141.25	139.52	138.50	139.04
EOM	136.13	139.40	140.94	142.21	143.56	144.94	144.17	145.17	141.11	139.20	138.94	138.94

WATER YEAR 1999 HIGHEST INSTANTANEOUS 132.98 OCT 01, 1998
 LOWEST INSTANTANEOUS 146.42 MAY 21, 1999



GROUND-WATER LEVELS

CITY OF NEWPORT NEWS

371208076341102. Local number, 58F 51 SOW 171B.

LOCATION.--Lat 37°12'08", long 76°34'11", Hydrologic Unit 02080206, 0.4 mi southeast of the intersection of State Highways 143 and 238 and 150 ft north of State Highway 143 in the city of Newport News. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 851 ft, screened 820 to 830 ft.

INSTRUMENTATION.--Electronic pressure transducer data logger--60-minute record interval. Prior to Apr. 24, 1996, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 55 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum prior to Apr. 14, 1993; 1.80 ft thereafter.

REMARKS.--Missing record due to recorder malfunction. Water level affected by regional drawdown, nearby pumpage, and occasional pumpage for water-quality sampling. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

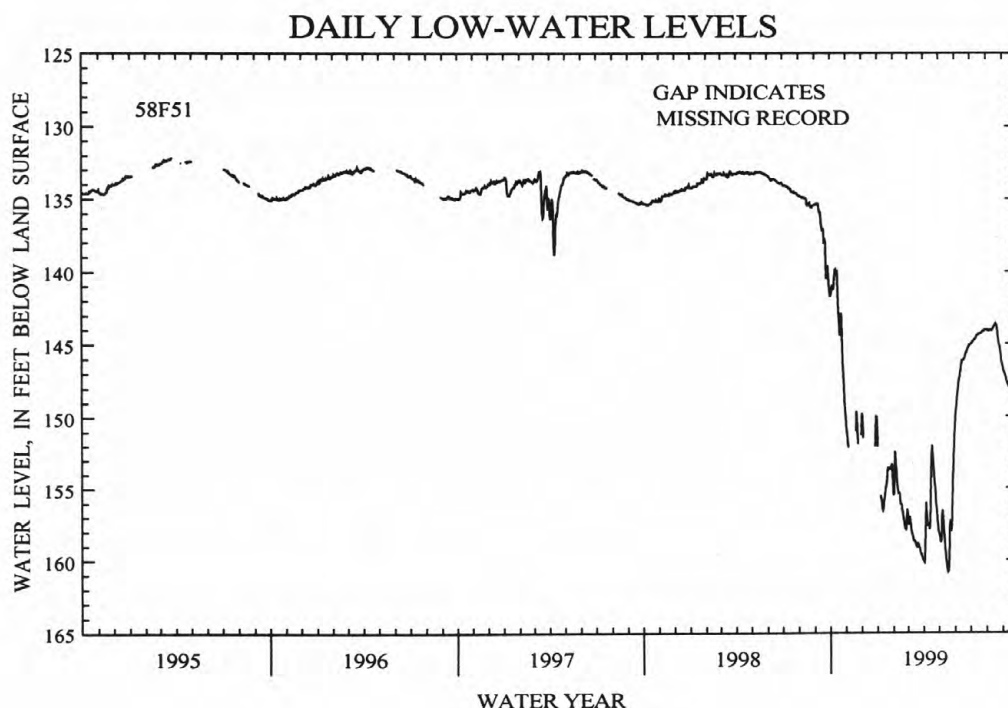
PERIOD OF RECORD.--July 1984 to current year. Unpublished records available prior to October 1986 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 126.35 ft below land-surface datum, Mar. 23-25, 1985; lowest recorded, 160.80 ft below land-surface datum, May 18, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999 LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	140.94	152.13	---	---	153.22	157.22	155.98	158.45	148.65	144.89	144.08	146.96
10	140.25	---	---	156.36	155.35	158.38	157.39	158.15	147.18	144.67	144.06	147.56
15	140.04	---	---	155.33	156.11	158.78	154.00	160.25	146.09	144.40	143.86	147.97
20	144.41	150.99	---	153.86	157.08	158.85	153.72	159.72	145.94	144.29	143.62	146.01
25	145.17	---	---	153.63	157.94	159.48	156.32	157.56	145.40	144.13	144.93	146.56
EOM	150.12	151.28	151.08	155.27	156.76	160.02	158.09	151.15	145.06	144.04	146.32	147.26

WATER YEAR 1999 HIGHEST INSTANTANEOUS 139.54 OCT 15, 1998
 LOWEST INSTANTANEOUS 160.80 MAY 18, 1999



GROUND-WATER LEVELS

CITY OF NEWPORT NEWS

371208076341103. Local number, 58F 52 SOW 171C.

LOCATION.--Lat 37°12'08", long 76°34'11", Hydrologic Unit 02080206, 0.4 mi southeast of the intersection of State Highways 143 and 238 and 150 ft north of State Highway 143 in the city of Newport News. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 537 ft, screened 527 to 537 ft.

INSTRUMENTATION.--Electronic pressure transducer data logger--60-minute record interval. Prior to April 24, 1996, digital recorder--60-minute punch. October 1993 to June 1994, occasional measurement with chalked tape by USGS personnel. Prior to October 1993, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 55 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum prior to Apr. 14, 1993; 3.1 ft thereafter.

REMARKS.--Missing record due to recorder malfunction. Water level affected by regional drawdown, nearby pumpage, and occasional pumpage for water-quality sampling. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

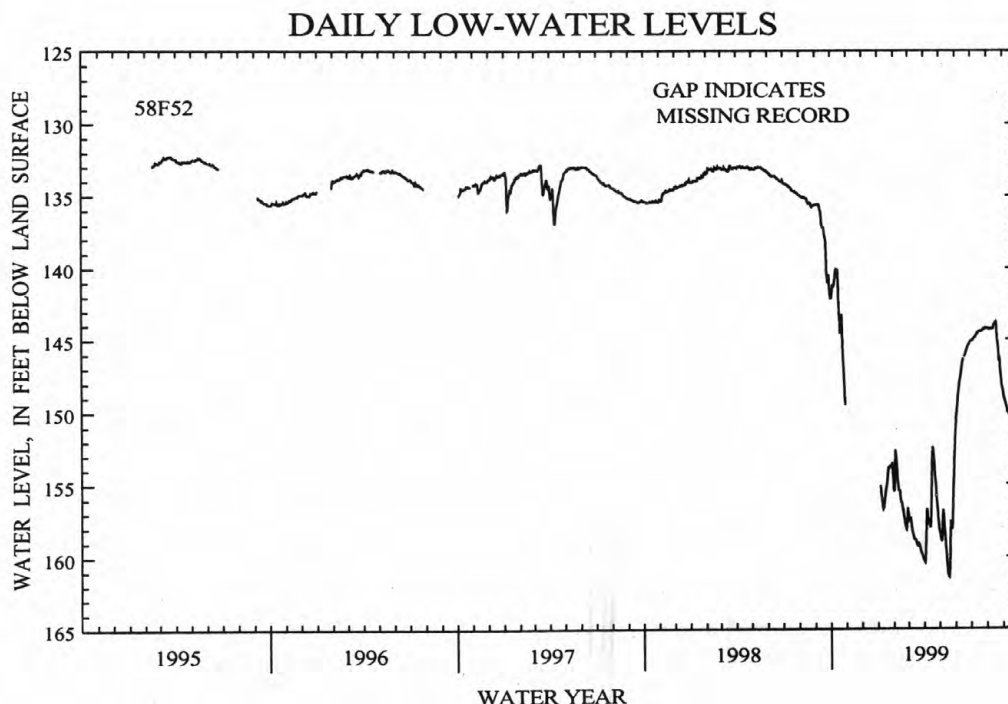
PERIOD OF RECORD.--June 1984 to current year. Unpublished records available prior to October 1986 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 128.12 ft below land-surface datum, Mar. 23, 1985; lowest measured, 161.40 ft below land-surface datum, May 19, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999 LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	141.18	---	---	---	153.20	157.34	156.80	158.77	149.08	145.01	144.27	149.24
10	140.60	---	---	156.51	155.37	158.51	157.63	158.25	147.61	144.79	144.25	149.86
15	140.09	---	---	155.70	156.25	158.87	154.66	160.69	146.50	144.58	144.04	150.27
20	144.48	---	---	154.23	157.17	159.05	153.66	160.61	146.02	144.45	143.86	146.39
25	145.08	---	---	153.78	158.08	159.66	156.34	157.91	145.48	144.30	146.53	148.67
EOM	---	---	---	155.21	156.83	160.25	158.21	151.71	145.15	144.21	148.36	149.46

WATER YEAR 1999	HIGHEST INSTANTANEOUS	139.84	OCT 12, 15, 1998
	LOWEST INSTANTANEOUS	161.40	MAY 19, 1999



GROUND-WATER LEVELS

CITY OF NEWPORT NEWS

371208076341104. Local number, 58F 53 SOW 171D.

LOCATION.--Lat 37°12'08", long 76°34'11", Hydrologic Unit 02080206, 0.4 mi southeast of the intersection of State Highways 143 and 238 and 150 ft north of State Highway 143 in the city of Newport News. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Chickahominy-Piney Point aquifer of Eocene-Oligocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 343 ft, screened 333 to 343 ft.

INSTRUMENTATION.--Digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 55 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum prior to Apr. 14, 1993; 2.9 ft thereafter.

REMARKS.--Missing record due to recorder malfunction. Water level affected by regional drawdown and occasional pumpage for water-quality sampling. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

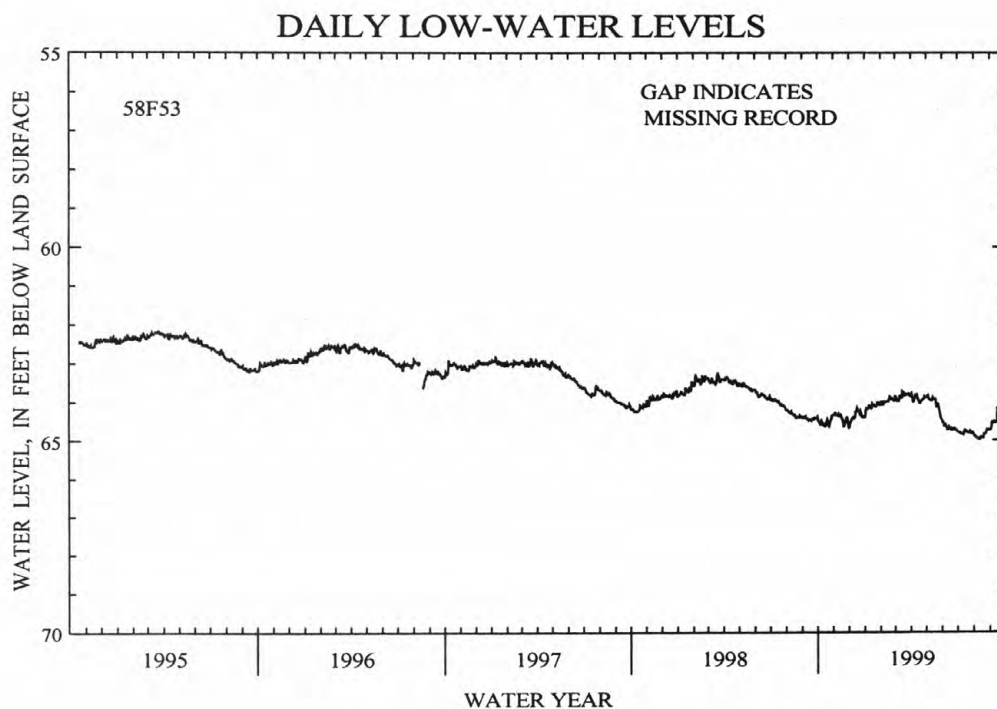
PERIOD OF RECORD.--July 1984 to current year. Unpublished records available prior to October 1986 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 55.18 ft below land-surface datum, Feb. 2, 1985; lowest recorded, 64.98 ft below land-surface datum, Aug. 12, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999 LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	64.53	64.28	64.52	64.17	64.07	63.97	64.00	63.87	64.62	64.80	64.89	64.54
10	64.53	64.33	64.41	64.09	64.01	63.84	63.87	63.95	64.69	64.83	64.95	64.50
15	64.63	64.31	64.25	64.14	63.98	63.72	63.93	63.92	64.67	64.73	64.92	64.53
20	64.46	64.50	64.23	64.08	63.87	63.83	63.99	64.04	64.73	64.78	64.94	64.30
25	64.58	64.50	64.30	64.03	63.92	63.80	63.92	64.12	64.70	64.75	64.81	64.30
EOM	64.34	64.57	64.40	64.07	63.92	63.84	63.87	64.44	64.74	64.80	64.73	64.26

WATER YEAR 1999 HIGHEST INSTANTANEOUS 63.33 SEP 16, 1999
 LOWEST INSTANTANEOUS 64.98 AUG 12, 1999



GROUND-WATER LEVELS
CITY OF NEWPORT NEWS

371208076341105. Local number, 58F 54 SOW 171E.

LOCATION: --Lat 37°12'08", long 76°34'11", Hydrologic Unit 02080206, 0.4 mi southeast of the intersection of State Highways 143 and 238 and 150 ft north of State Highway 143 in the city of Newport News. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown confining unit of Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 88 ft, screened 78 to 88 ft.

INSTRUMENTATION.--Digital recorder--60-minute punch. Removed digital recorder Oct. 18, 1991; reinstalled July 8, 1992. Occasional measurements with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 55 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum prior to July 8, 1992; 1.6 ft thereafter.

REMARKS.--Missing record due to recorder malfunction. Water level affected by occasional pumpage for water-quality sampling. Occasional stepping in hydrograph due to well not being plum and float rubbing the side of the casing.

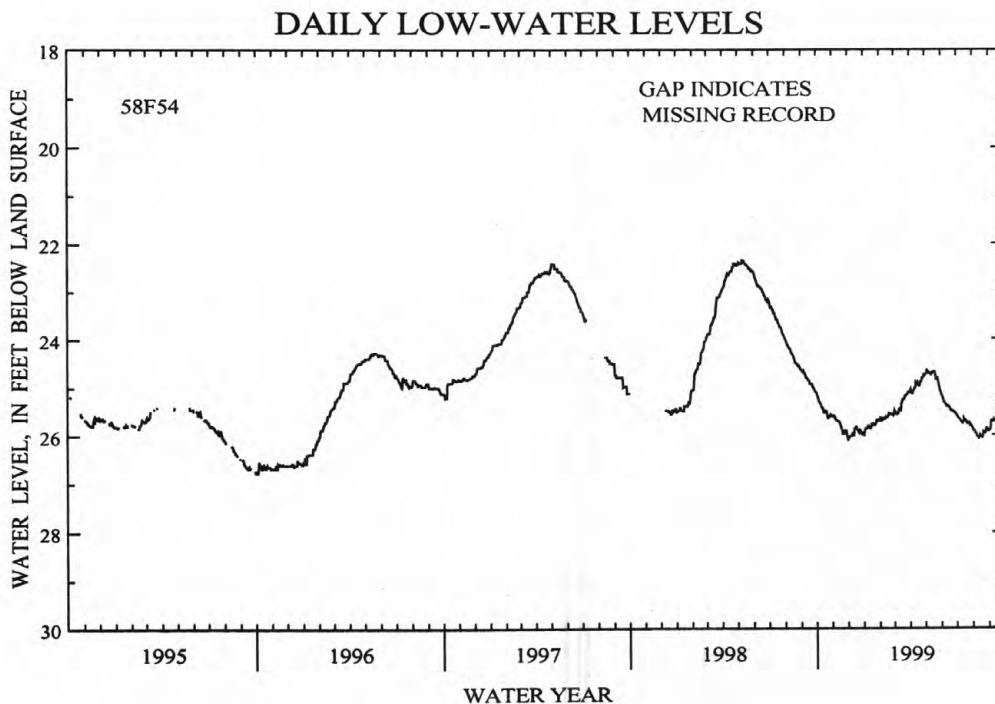
PERIOD OF RECORD.--June 1984 to October 1991, July 1992 to current year. Unpublished records available prior to October 1986 in files of the Geological Survey.

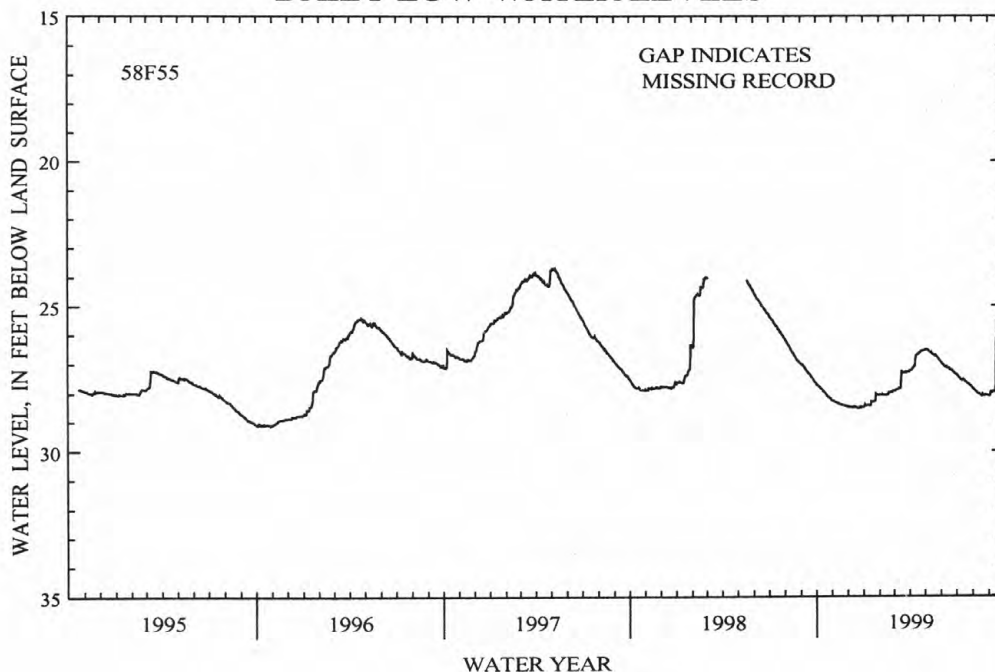
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 22.05 ft below land-surface datum, May 20, 21, 1993; lowest recorded, 27.34 ft below land-surface datum, Nov. 1, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	25.28	25.61	26.04	25.86	25.70	25.57	25.14	24.67	25.29	25.66	25.92	25.71
10	25.38	25.70	25.98	25.81	25.66	25.48	25.02	24.72	25.40	25.73	26.03	25.70
15	25.53	25.74	25.87	25.85	25.64	25.32	24.94	24.70	25.41	25.65	26.00	25.70
20	25.50	25.90	25.90	25.78	25.55	25.27	24.93	24.77	25.50	25.75	26.06	25.29
25	25.64	25.95	25.90	25.72	25.57	25.16	24.82	24.87	25.52	25.73	25.96	25.20
EOM	25.60	26.02	26.00	25.71	25.56	25.12	24.75	25.12	25.58	25.84	25.92	25.12

WATER YEAR 1999	HIGHEST INSTANTANEOUS	24.65	MAY 4-5, 1999
	LOWEST INSTANTANEOUS	26.10	DEC 2, 1998





GROUND-WATER LEVELS

CITY OF NORFOLK

365223076122101. Local number, 61C 1.

LOCATION.--Lat 36°52'23", long 76°12'21", Hydrologic Unit 02080108, at Moores Bridge Filter Plant, 0.3 mi east of intersection of State Highway 165 and U.S. Highway 13 in Norfolk. Owner: City of Norfolk.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in., depth 970 ft, screened 900 to 960 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 10.80 ft above National Geodetic Vertical Datum of 1929. Measuring point: Inner edge of manhole at land-surface datum. Prior to Oct. 29, 1987, measuring point at top of casing, 3.15 ft above land-surface datum.

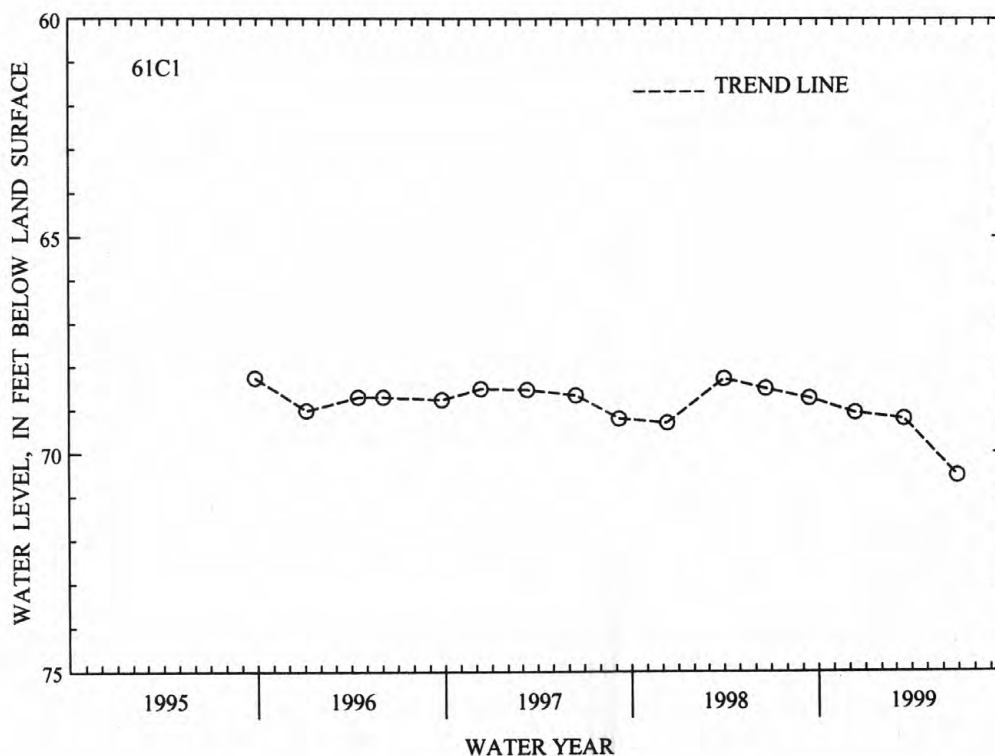
REMARKS.--Water level affected by pumpage, regional drawdown, and recharge operations in nearby wells May 18, 1971, to Nov. 5, 1973.

PERIOD OF RECORD.--January 1968 to June 1990, September 1995 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.70 ft below land-surface datum, Feb. 17, 1968; lowest measured, 70.52 ft below land-surface datum, June 29, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
	DEC 16	69.07	MAR 18	69.21	JUN 29	70.52
WATER YEAR 1999	HIGHEST	69.07	DEC 16, 1998			
	LOWEST	70.52	JUN 29, 1999			



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

371543076003401. Local number, 62G 15 SOW 121.

LOCATION.--Lat 37°15'43", long 76°00'34", Hydrologic Unit 02080110, 100 ft southwest of State Highway 642, 0.5 mi south of intersection of State Highways 184 and 642, and 0.7 mi southeast of Cape Charles. Owner: Brown and Root Corporation.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 190 ft, screened 180 to 190 ft.

INSTRUMENTATION.--Continuous strip-chart recorder. Prior to July 15, 1985, occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 12 ft above sea level, from topographic map. Measuring point: Top of recorder shelf, 1.5 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Missing record due to recorder malfunction. Water level affected by local pumpage.

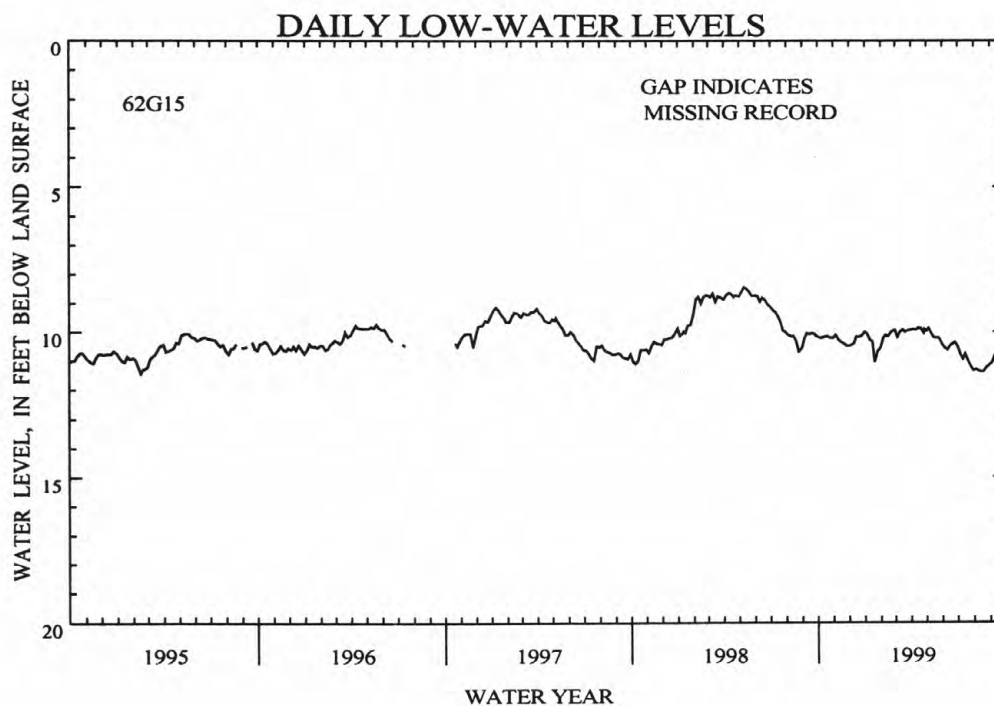
PERIOD OF RECORD.--November 1980 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 8.37 ft below land-surface datum, May 11, 12, 13, 1998; lowest recorded, 14.31 ft below land-surface datum, Jan. 16, 17, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	10.19	10.10	10.45	10.05	10.22	10.17	9.90	9.86	10.54	10.77	11.29	11.05
10	10.18	10.25	10.40	10.26	10.11	9.99	9.92	10.04	10.62	10.93	11.34	10.82
15	10.15	10.34	10.15	10.33	10.14	9.92	9.85	10.18	10.50	10.76	11.36	10.76
20	10.14	10.40	10.16	11.03	10.02	10.00	9.87	10.20	10.41	10.98	11.36	10.30
25	10.19	10.46	10.13	10.67	9.94	9.94	10.02	10.19	10.35	11.16	11.23	10.35
EOM	10.19	10.47	10.00	10.54	9.93	9.92	9.96	10.40	10.47	11.33	11.13	10.29

WATER YEAR 1999	HIGHEST INSTANTANEOUS	9.73	APR 15, 1999
	LOWEST INSTANTANEOUS	11.42	AUG 07, 1999



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

371307075583501. Local number, 63F 15 SOW 105A.

LOCATION.--Lat 37°13'07", 75°58'35", Hydrologic Unit 02080109, 50 ft south of State Highway 644, 0.3 mi west of intersection of State Highway 644 and U.S. Highway 13, and 1.3 mi north of Cheapside. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 130 ft, screened 120 to 130 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 5, 1985 to Oct. 24, 1995, continuous strip-chart recorder. Prior to Oct. 5, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 31.97 ft above sea level. Measuring point: Top of recorder shelf, 1.1 ft above land-surface datum prior to July 21, 1987; 1.4 ft thereafter.

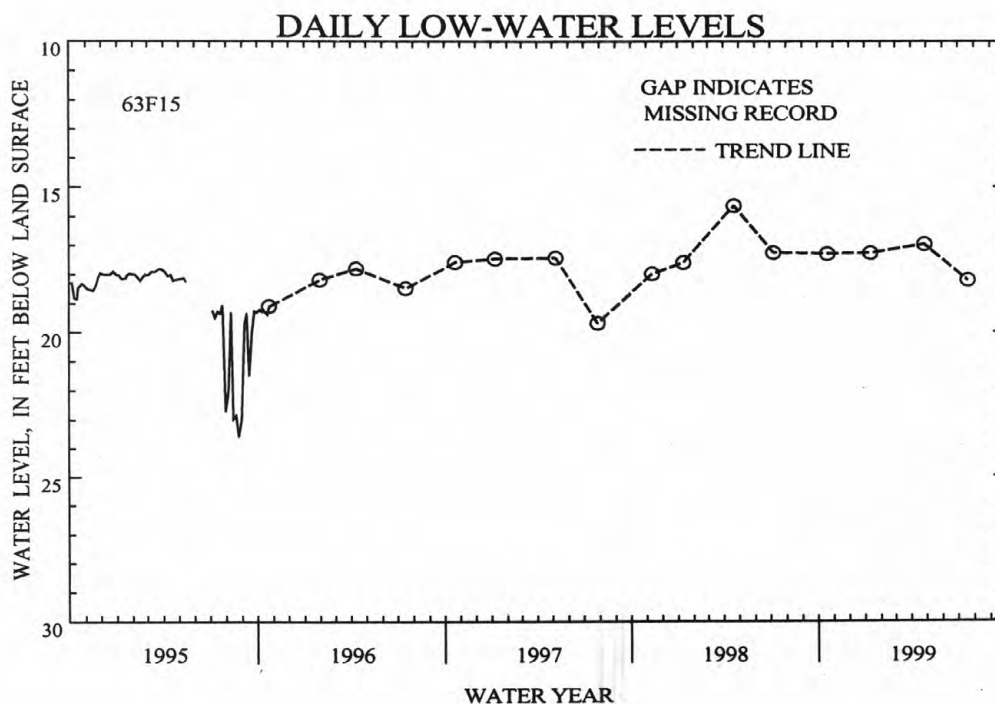
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Missing record due to recorder malfunction. Water level affected by local pumpage.

PERIOD OF RECORD.--June 1978 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.44 ft below land-surface datum, Apr. 12, 1982; lowest recorded, 24.62 ft below land-surface datum, June 15, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	17.29	JAN 12	17.26	APR 27	16.96	JUL 20	18.20
WATER YEAR 1999	HIGHEST	16.96	APR 27, 1999				
	LOWEST	18.20	JUL 20, 1999				



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

371307075583502. Local number, 63F 16 SOW 105C.

LOCATION.--Lat 37°13'07", long 75°58'35", Hydrologic Unit 02080109, 50 ft south of State Highway 644, 0.3 mi west of intersection of State Highway 644 and U.S. Highway 13, and 1.3 mi north of Cheapside. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 285 ft, screened 275 to 285 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 30, 1985, to July 24, 1995, bimonthly measurement with chalked tape. Prior to Sept. 30, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 31.16 ft above sea level. Measuring point: Top of casing, 0.1 ft above land-surface datum prior to Mar. 1, 1994; 0.6 ft thereafter.

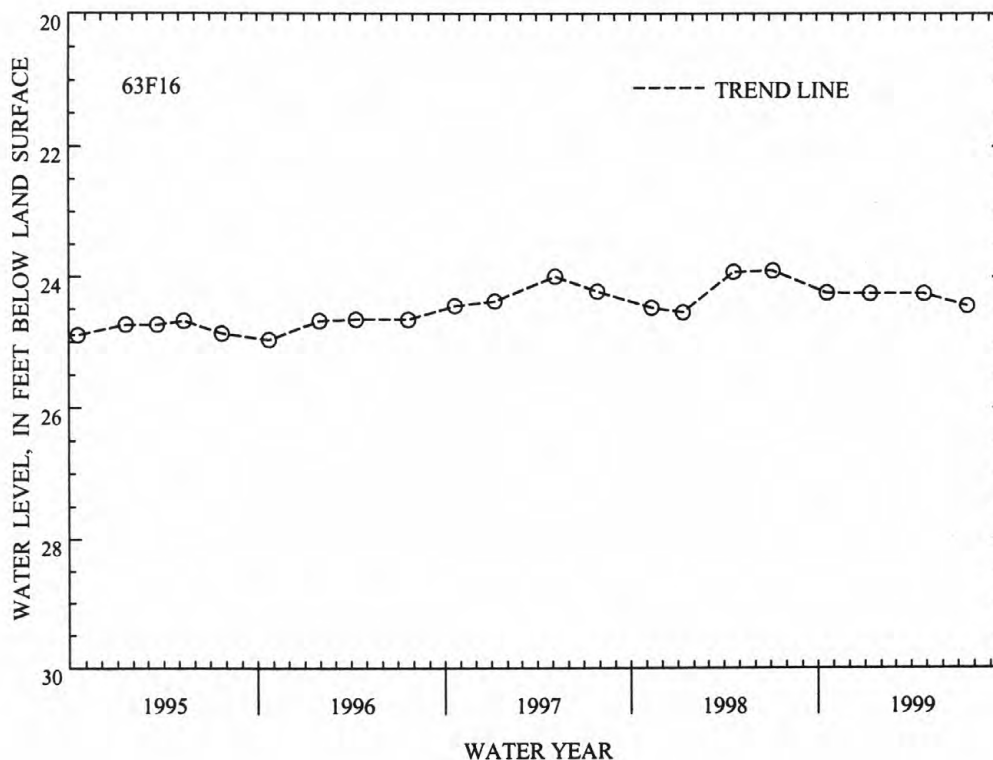
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--June 1978 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 23.90 ft below land-surface datum, July 7, 1998; lowest measured, 29.58 ft below land-surface datum, May 23, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	24.24	JAN 12	24.25	APR 27	24.25	JUL 20	24.44
WATER YEAR 1999		HIGHEST	24.24	OCT 20, 1998			
		LOWEST	24.44	JUL 20, 1999			



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

371307075583503. Local number, 63F 17 SOW 105B.

LOCATION.--Lat 37°13'07", long 75°58'35", Hydrologic Unit 02080109, 50 ft south of State Highway 644, 0.3 mi west of intersection of State Highway 644 and U.S. Highway 13, and 1.3 mi north of Cheapside. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 196 ft, screened 186 to 196 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 30, 1985, to July 24, 1995, bimonthly measurement with chalked tape. Prior to Sept. 30, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 31.50 ft above sea level. Measuring point: Top of casing, 0.5 ft above land-surface datum, prior to July 22, 1996. 1.0 ft thereafter.

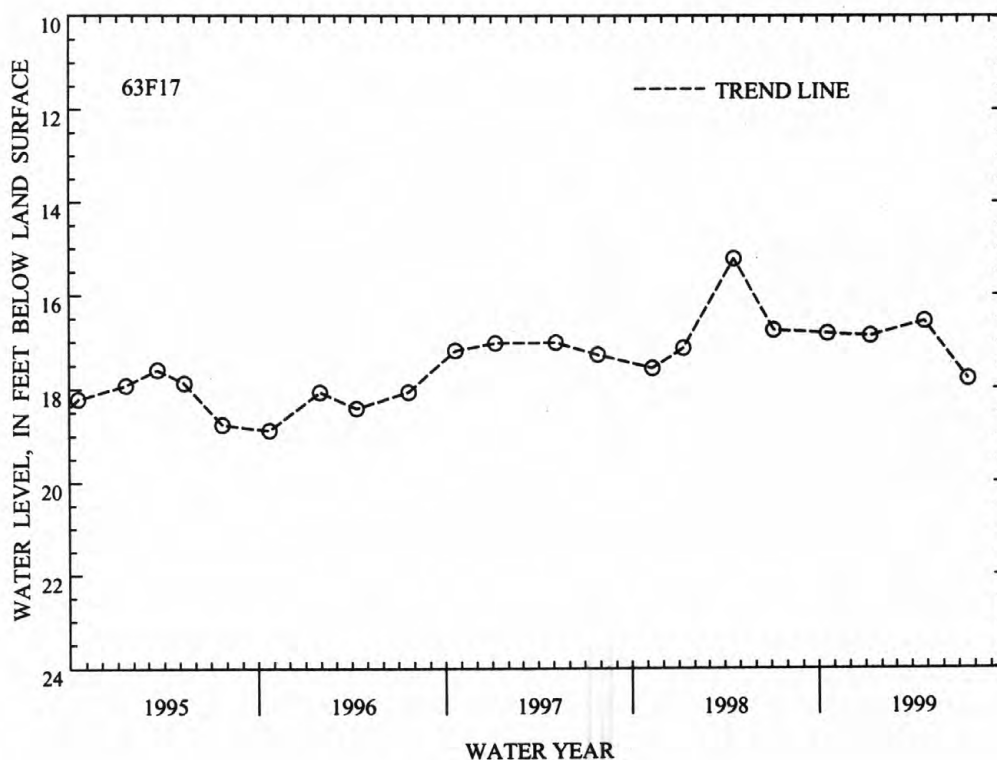
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage.

PERIOD OF RECORD.--June 1978 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.22 ft below land-surface datum, Apr. 21, 1998; lowest measured, 21.68 ft below land-surface datum, Feb. 11, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	16.82	JAN 12	16.87	APR 27	16.56	JUL 20	17.79
WATER YEAR 1999		HIGHEST	16.56	APR 27, 1999			
		LOWEST	17.79	JUL 20, 1999			



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

371307075583601. Local number, 63F 34.

LOCATION.--Lat 37°13'07", long 75°58'36", Hydrologic Unit 02080109, 50 ft south of State Highway 644, 0.35 mi west of intersection of U.S. Highway 13 and State Highway 644, and 1.55 mi northwest of Capeville. Owner: U.S. Geological Survey.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Driven observation water well, diameter 2 in., depth 13 ft, screened 10 to 13 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Aug. 16 to Sept. 30, 1989, bimonthly measurement with chalked tape by USGS personnel. Jan. 22, 1988, to Aug. 16, 1989, digital recorder--60-minute punch. Prior to Jan. 22, 1988, bimonthly measurement with chalked tape.

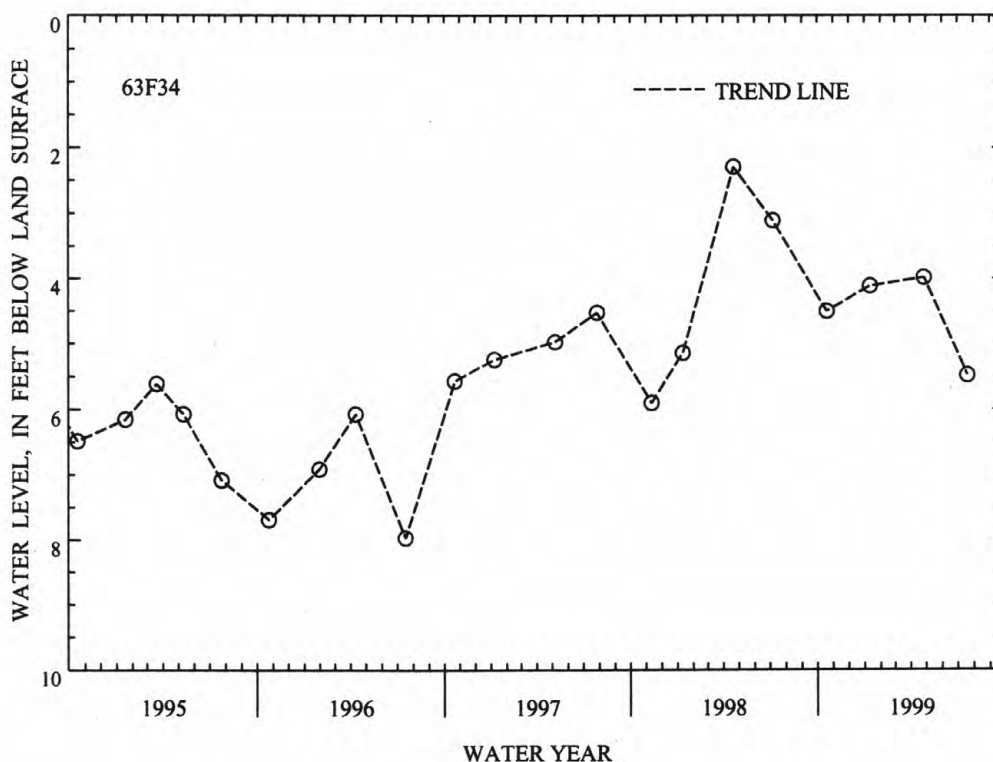
DATUM.--Elevation of land-surface datum is 31.15 ft above sea level. Measuring point: Top of casing, 1.85 ft above land-surface datum.

PERIOD OF RECORD.--September 1987 to current year. Unpublished records available prior to October 1987 in files of the U.S. Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.29 ft below land-surface datum, Apr. 21, 1998; lowest measured, 9.08 ft below land-surface datum, Feb. 4, 5, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	4.50	JAN 12	4.11	APR 27	3.98	JUL 20	5.48
WATER YEAR 1999	HIGHEST	3.98	APR 27, 1999				
	LOWEST	5.48	JUL 20, 1999				



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

370807075570802. Local number, 63F 51 SOW 182A

LOCATION.--Lat 37°08'07", long 75°57'08", Hydrologic Unit 02080110, at Kiptopeke Wildlife Refuge, 0.6 mi southeast of State Highway 600, 0.8 mi southeast of Kiptopeke, and 0.9 mi southeast of intersection of State Highway 600 and U.S. Highway 13. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 1,730 ft, screened 1,720 to 1,730 ft.

INSTRUMENTATION.--Occasional measurement with manometer and/or chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 24, 1995, bimonthly measurement with manometer and/or chalked tape.

DATUM.--Elevation of land-surface datum is 10 ft above sea level, from topographic map. Measuring point: Top of casing, 1.2 ft above land-surface datum.

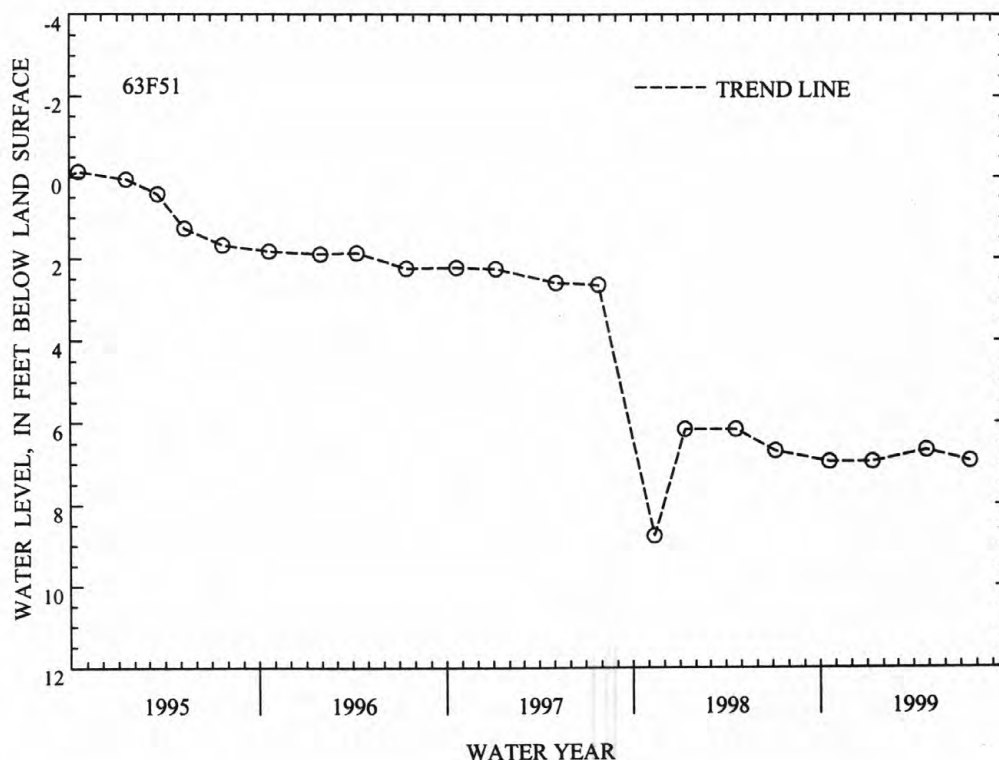
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by occasional pumpage for water-quality sampling.

PERIOD OF RECORD.--May 1990 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.35 ft above land-surface datum, May 7, 1990; lowest measured, 8.76 ft below land-surface datum, Nov. 12, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	6.95	JAN 12	6.95	APR 27	6.66	JUL 20	6.93
WATER YEAR 1999	HIGHEST	6.66	APR 27, 1999				
	LOWEST	6.95	OCT 20, 1998, JAN 12, 1999				



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

370807075570803. Local number, 63F 52 SOW 182B.

LOCATION.--Lat 37°08'07", long 75°57'08", Hydrologic Unit 02080110, at Kiptopeke Wildlife Refuge, 0.6 mi southeast of State Highway 600, 0.8 mi southeast of Kiptopeke, and 0.9 mi southeast of intersection of State Highway 600 and U.S. Highway 13. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in. to 1,040 ft, diameter 2 in. from 1,040 to 1,320 ft, depth 1,320 ft, screened 1,300 to 1,320 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 24, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 10 ft above sea level, from topographic map. Measuring point: Top of casing, 1.3 ft above land-surface datum.

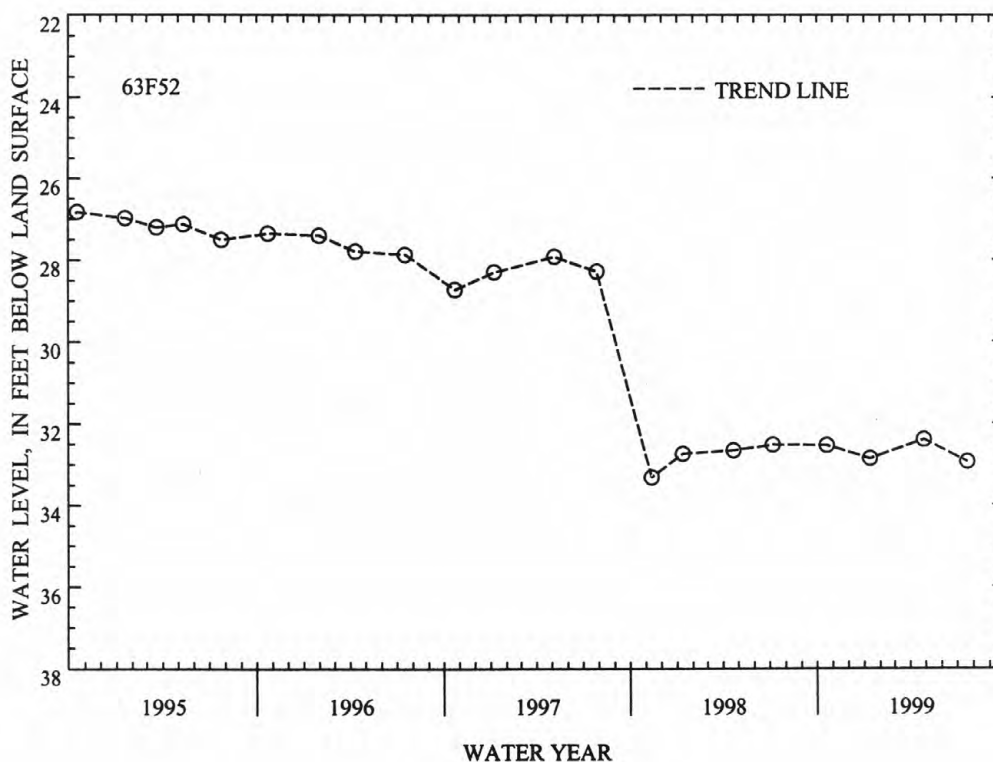
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by occasional pumpage for water-quality sampling.

PERIOD OF RECORD.--May 1990 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 26.12 ft below land-surface datum, Dec. 3, 1990; lowest measured, 33.32 ft below land-surface datum, Nov. 12, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	32.53	JAN 12	32.86	APR 27	32.39	JUL 20	32.94
WATER YEAR 1999		HIGHEST	32.39	APR 27, 1999			
		LOWEST	32.94	JUL 20, 1999			



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

370807075570804. Local number, 63F 53 SOW 182C.

LOCATION.--Lat 37°08'07", long 75°57'08", Hydrologic Unit 02080110, at Kiptopeke Wildlife Refuge, 0.6 mi southeast of State Highway 600, 0.8 mi southeast of Kiptopeke, and 0.9 mi southeast of intersection of State Highway 600 and U.S. Highway 13. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in. to 188 ft, diameter 2 in. from 188 to 220 ft, depth 220 ft, screened 210 to 220 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 10 ft above sea level, from topographic map. Measuring point: Top of casing, 1.4 ft above land-surface datum.

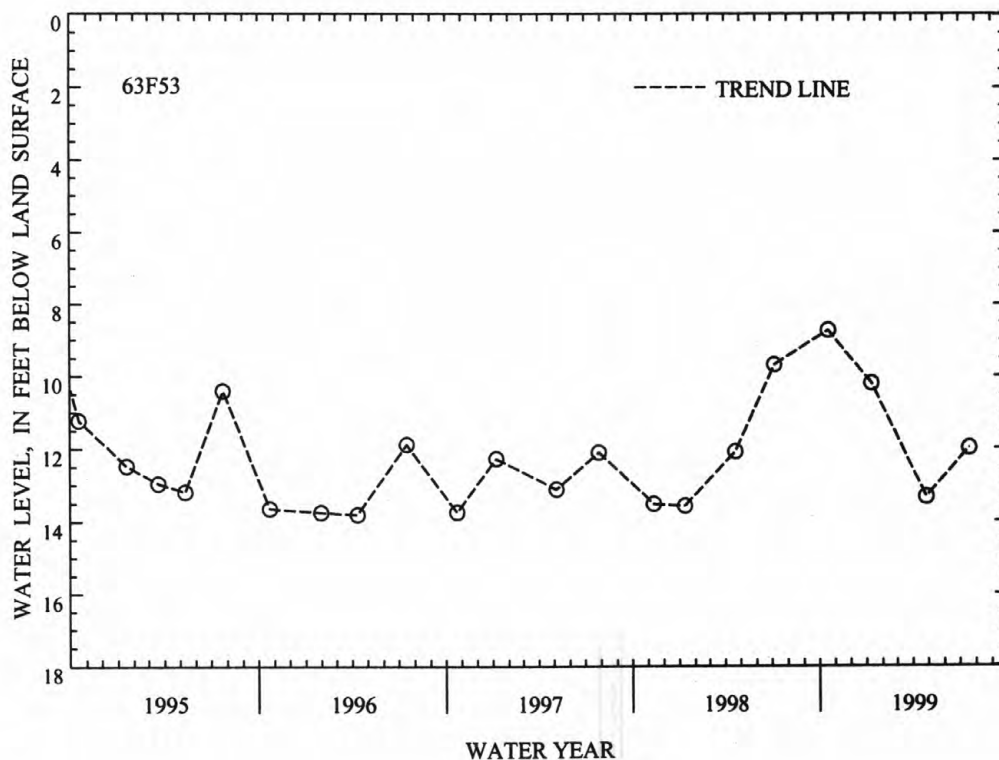
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--May 1990 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.90 ft below land-surface datum, Jan. 22, 1991; lowest measured, 13.80 ft below land-surface datum, Apr. 11, 1996.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	8.73	JAN 12	10.20	APR 27	13.33	JUL 20	11.98
WATER YEAR 1999	HIGHEST	8.73	OCT 20, 1998				
	LOWEST	13.33	APR 27, 1999				



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

370807075570805. Local number, 63F 54 SOW 182D.

LOCATION.--Lat 37°08'07", long 75°57'08", Hydrologic Unit 02080110, at Kiptopeke Wildlife Refuge, 0.6 mi southeast of State Highway 600, 0.8 mi southeast of Kiptopeke, and 0.9 mi southeast of intersection of State Highway 600 and U.S. Highway 13. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 55 ft, screened 45 to 55 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 24, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 10 ft above sea level, from topographic map. Measuring point: Top of casing, 1.3 ft above land-surface datum.

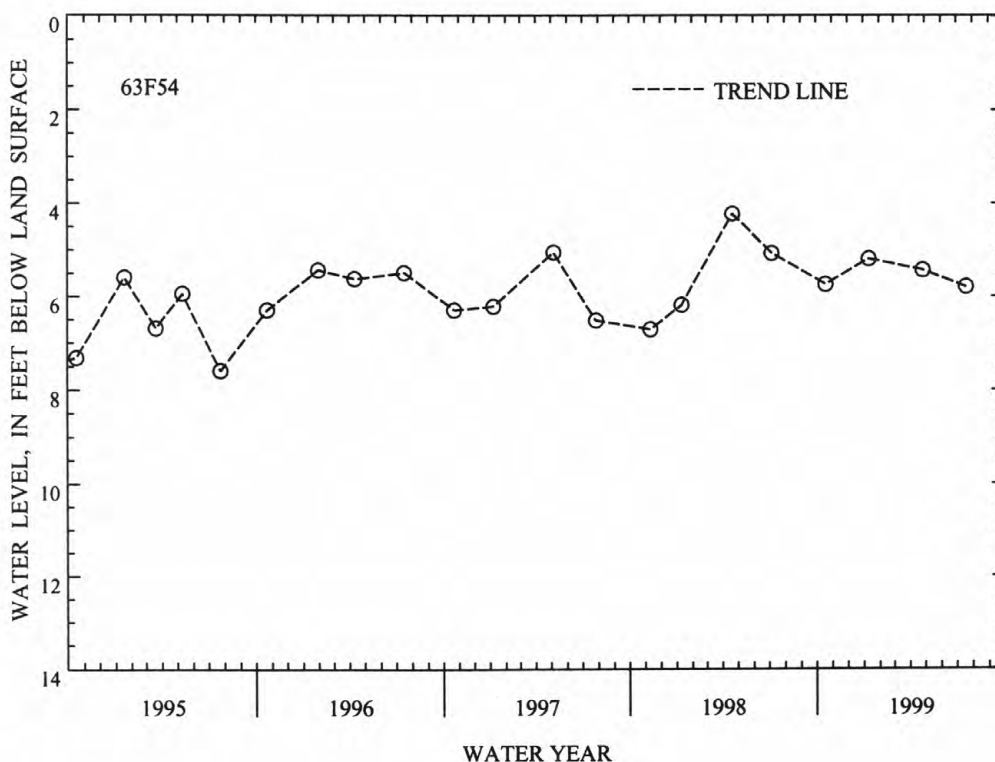
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--May 1990 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.22 ft below land-surface datum, Apr. 21, 1998; lowest measured, 7.90 ft below land-surface datum, July 8, 1993.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	5.74	JAN 12	5.19	APR 27	5.43	JUL 20	5.79
WATER YEAR 1999	HIGHEST	5.19	JAN 12, 1999				
	LOWEST	5.79	JUL 20, 1999				



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

370807075570806. Local number, 63F 55 SOW 182E.

LOCATION.--Lat 37°08'07", long 75°57'08", Hydrologic Unit 02080110, at Kiptopeke Wildlife Refuge, 0.6 mi southeast of State Highway 600, 0.8 mi southeast of Kiptopeke, and 0.9 mi southeast of intersection of State Highway 600 and U.S. Highway 13. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 20 ft, screened 10 to 20 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 24, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 10 ft above sea level, from topographic map. Measuring point: Top of casing, 1.3 ft above land-surface datum.

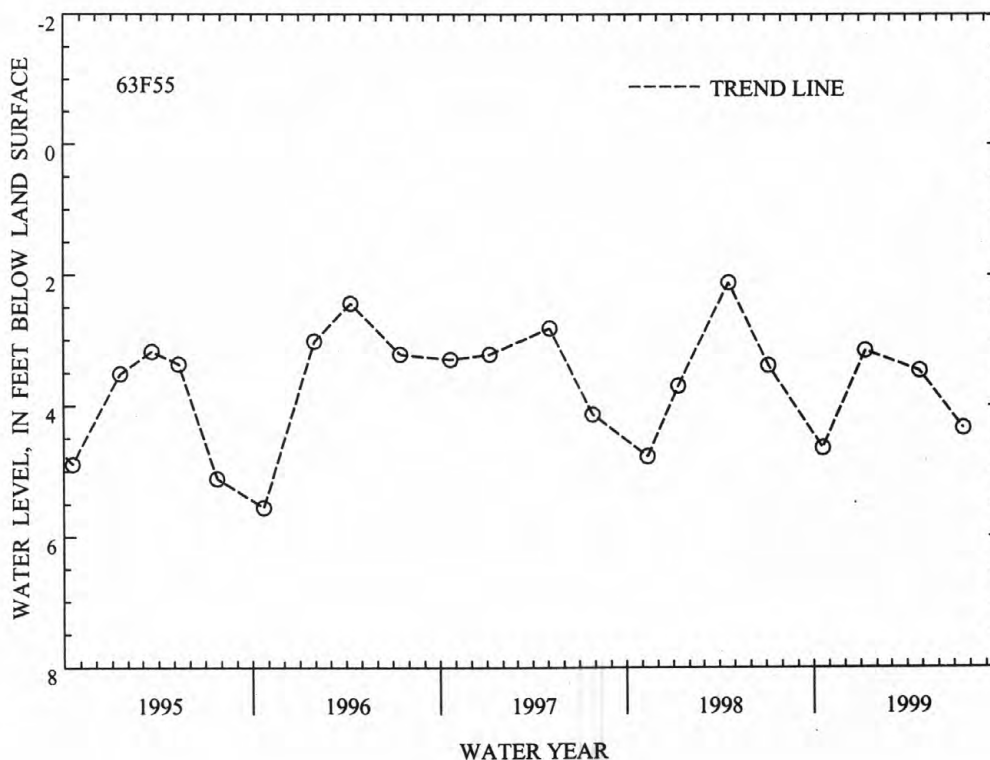
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--May 1990 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.57 ft below land-surface datum, Feb. 24, 1994; lowest measured, 6.20 ft below land-surface datum, Oct. 9, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	4.64	JAN 12	3.15	APR 27	3.46	JUL 20	4.34
WATER YEAR 1999	HIGHEST	3.15	JAN 12, 1999				
	LOWEST	4.64	OCT 20, 1998				



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

371709075560801. Local number, 63G 15 SOW 104C.

LOCATION.--Lat 37°17'09", long 75°56'08", Hydrologic Unit 02080110, 50 ft north of State Highway 639, 0.1 mi east of intersection of State Highways 600 and 639, and 0.7 mi west of Oyster. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 310 ft, screened 300 to 310 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. July 15, 1985 to Oct. 23, 1995, continuous strip-chart recorder. Prior to July 15, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 28 ft above sea level, from topographic map. Measuring point: Top of recorder shelf, 1.24 ft above land-surface datum prior to Nov. 10, 1986; 1.75 ft prior to June 4, 1996. Top of casing, 1.50 ft thereafter.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by pumpage.

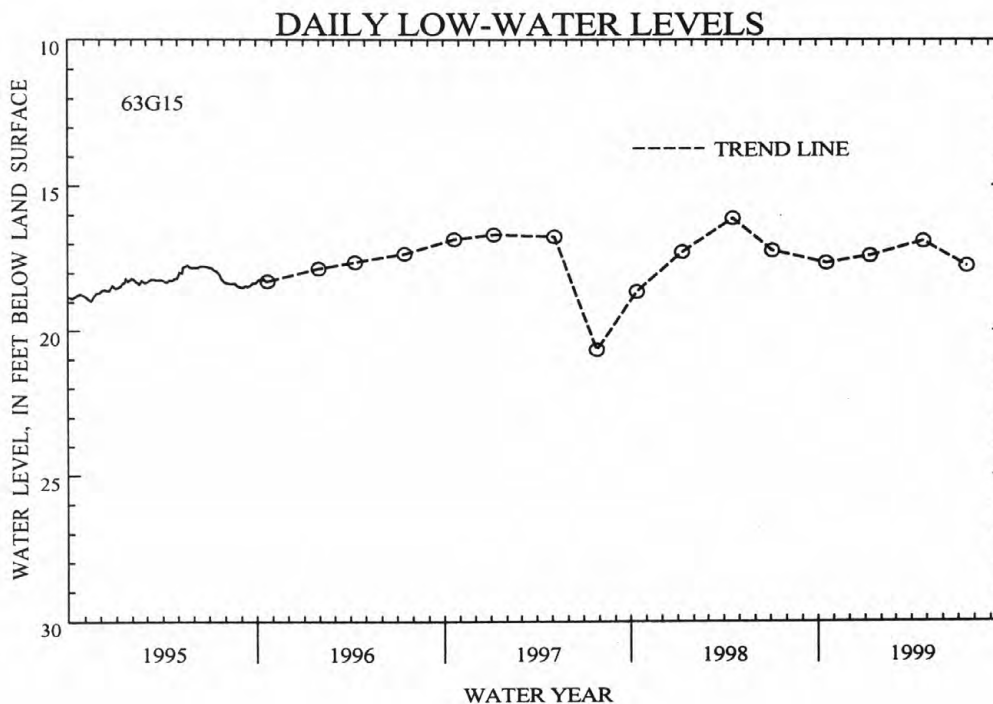
PERIOD OF RECORD.--October 1977 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 16.11 ft below land-surface datum, Apr. 21, 1998; lowest measured, 27.96 ft below land-surface datum, Oct. 8, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	17.65	JAN 13	17.40	APR 27	16.90	JUL 20	17.75

WATER YEAR 1999	HIGHEST	16.90	APR 27, 1999
	LOWEST	17.75	JUL 20, 1999



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

371709075560802. Local number, 63G 16 SOW 104B.

LOCATION.--Lat 37°17'09", 75°56'08", Hydrologic Unit 02080110, 50 ft north of State Highway 639, 0.1 mi east of intersection of State Highways 600 and 639, and 0.7 mi west of Oyster. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 240 ft, screened 230 to 240 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 30, 1985, to July 24, 1995, bimonthly measurement with chalked tape. Prior to Sept. 30, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 28 ft above sea level, from topographic map. Measuring point: Top of casing, 0.4 ft above land-surface datum prior to Feb. 29, 1988; 0.9 ft thereafter.

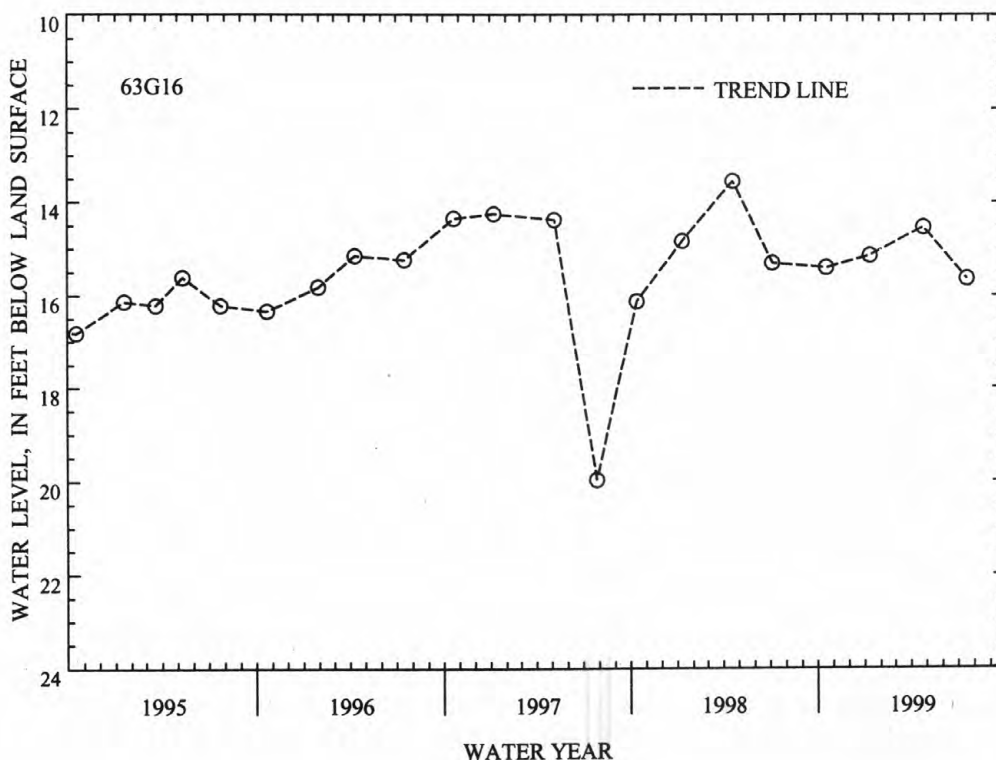
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by pumpage.

PERIOD OF RECORD.--October 1977 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 13.54 ft below land-surface datum, Apr. 21, 1998; lowest measured, 23.47 ft below land-surface datum, Oct. 8, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	15.40	JAN 13	15.14	APR 27	14.53	JUL 20	15.64
WATER YEAR 1999		HIGHEST	14.53	APR 27, 1999			
		LOWEST	15.64	JUL 20, 1999			



GROUND-WATER LEVELS
NORTHAMPTON COUNTY

371709075560803. Local number, 63G 17 SOW 104A.

LOCATION.--Lat 37°17'09", long 75°56'08", Hydrologic Unit 02080110, 50 ft north of State Highway 639, 0.1 mi east of intersection of State Highways 600 and 639, and 0.7 mi west of Oyster. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 140 ft, screened 130 to 140 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 30, 1985, to July 24, 1995, bimonthly measurement with chalked tape. Prior to Sept. 30, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 28 ft above sea level, from topographic map. Measuring point: Top of casing, 0.05 ft above land-surface datum prior to Feb. 29, 1988; 0.5 ft thereafter.

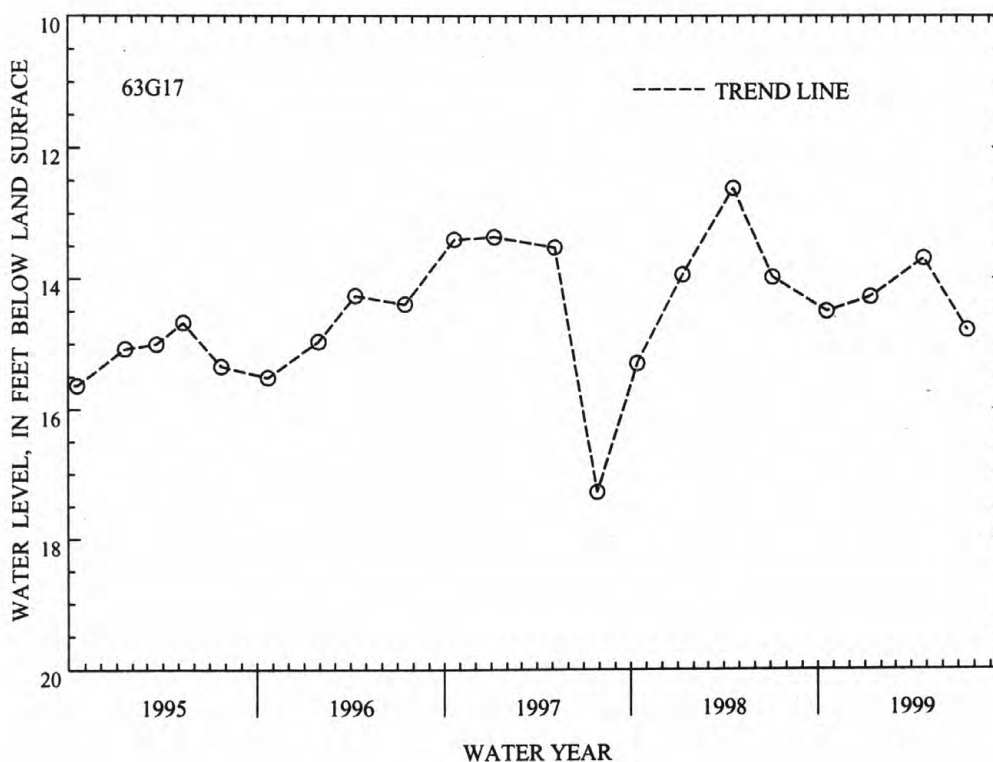
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by pumpage.

PERIOD OF RECORD.--October 1977 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.62 ft below land-surface datum, Apr. 21, 1998; lowest measured, 21.99 ft below land-surface datum, Oct. 8, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 20	14.50	JAN 13	14.28	APR 27	13.69	JUL 20	14.79
WATER YEAR 1999		HIGHEST	13.69	APR 27, 1999		LOWEST	14.79
							JUL 20, 1999



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

371653075584801. Local number, 63G 22 SOW 111A.

LOCATION.--Lat 37°16'53", long 75°58'48", Hydrologic Unit 02080109, 50 ft west of U.S. Highway 13, 0.4 mi north of intersection of U.S. Highway 13 and State Highway 641, and 0.7 mi southwest of Cheriton. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 150 ft, screened 140 to 150 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 30, 1985, to July 24, 1995, bimonthly measurement with chalked tape. Prior to Sept. 30, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, at land-surface datum prior to Apr. 27, 1987; 1.60 ft Apr. 27, 1987, to Feb. 29, 1988; 1.1 ft Mar. 1, 1988, to June 19, 1989; 0.80 ft thereafter.

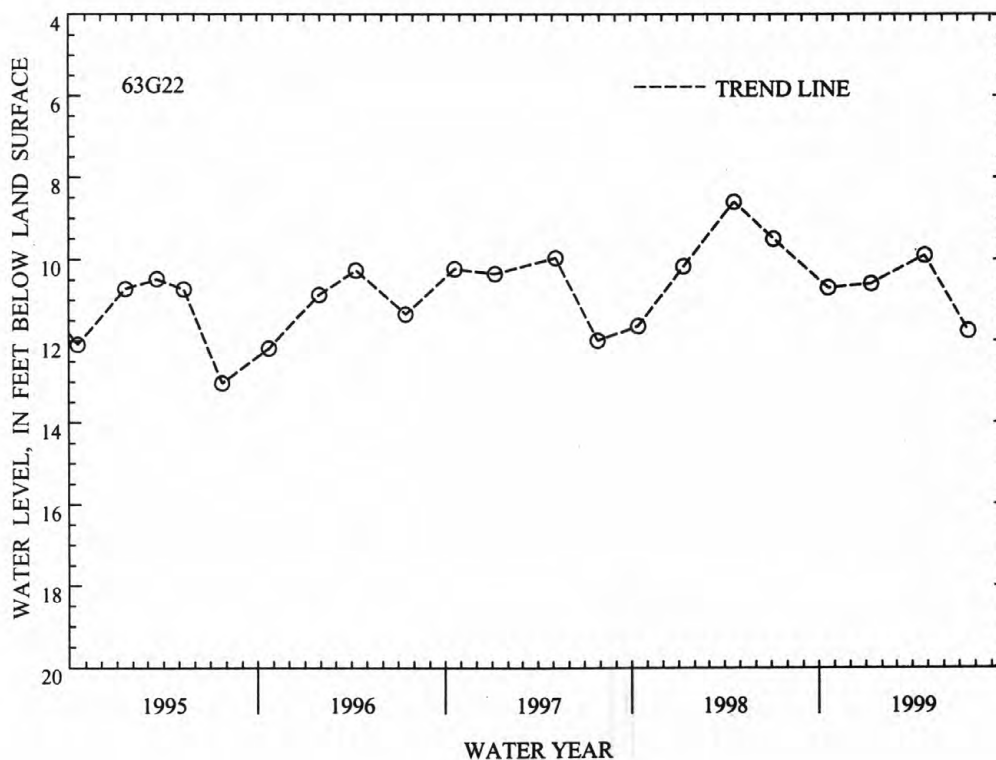
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by pumpage.

PERIOD OF RECORD.--July 1979 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.60 ft below land-surface datum, Apr. 21, 1998; lowest measured, 14.51 ft below land-surface datum, Feb. 17, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	10.69	JAN 13	10.59	APR 27	9.90	JUL 20	11.75
WATER YEAR 1999	HIGHEST	9.90	APR 27, 1999				
	LOWEST	11.75	JUL 20, 1999				



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

371653075584802. Local number, 63G 23 SOW 111B.

LOCATION.--Lat 37°16'53", long 75°58'48", Hydrologic Unit 02080109, 50 ft west of U.S. Highway 13, 0.4 mi north of intersection of U.S. Highway 13 and State Highway 641, and 0.7 mi southwest of Cheriton. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 280 ft, screened 270 to 280 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. July 20, 1985 to Oct 24, 1995, continuous strip chart recorder. Prior to July 20, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of recorder shelf, 1.42 ft above land-surface datum prior to July 20, 1987; 1.56 ft thereafter.

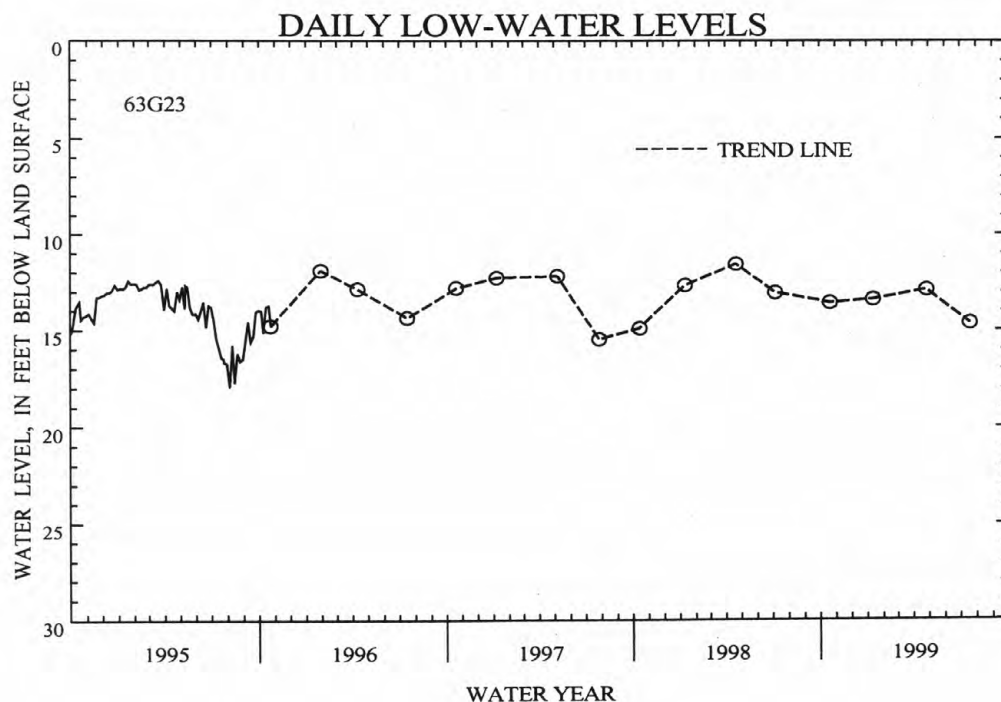
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by pumpage.

PERIOD OF RECORD.--July 1979 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.01 ft below land-surface datum, Dec. 30, 1982; lowest measured, 22.47 ft below land-surface datum, Sept. 15, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	13.57	JAN 13	13.40	APR 27	12.89	JUL 20	14.63
WATER YEAR 1999	HIGHEST	12.89	APR 27, 1999				
	LOWEST	14.63	JUL 20, 1999				



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

371653075584804. Local number, 63G 25 SOW 111S.

LOCATION.--Lat 37°16'53", long 75°58'48", Hydrologic Unit 02080109, 50 ft west of U.S. Highway 13, 0.4 mi north of intersection of U.S. Highway 13 and State Highway 641, and 0.7 mi southwest of Cheriton. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 1.25 in., depth 70 ft, screened 60 to 70 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 30, 1985, to July 24, 1995, bimonthly measurement with chalked tape. Prior to Sept. 30, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, 0.64 ft above land-surface datum prior to Oct. 10, 1996; 0.60 ft thereafter.

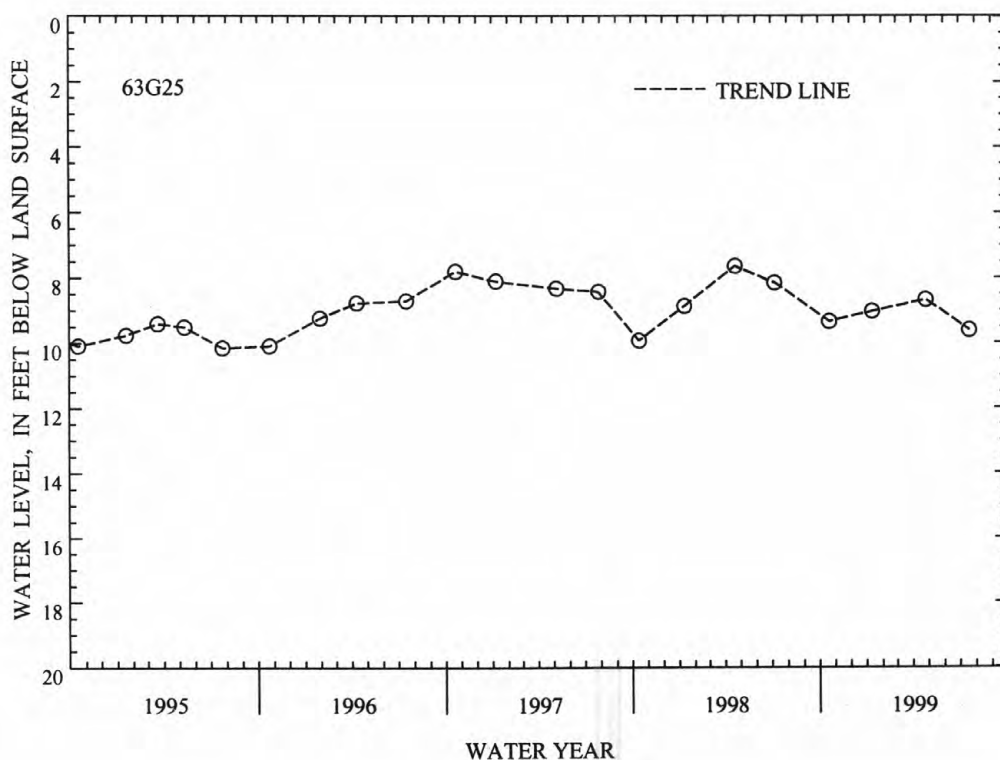
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--July 1979 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.64 ft below land-surface datum, Apr. 21, 1998; lowest measured, 10.82 ft below land-surface datum, Nov. 11, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	9.34	JAN 13	9.03	APR 27	8.67	JUL 20	9.61
WATER YEAR 1999	HIGHEST	8.67	APR 27, 1999				
	LOWEST	9.61	JUL 20, 1999				



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

372705075555901. Local number, 63H 4 SOW 103C.

LOCATION.--Lat 37°27'06", long 75°55'59", Hydrologic Unit 02080109, 0.2 mi north of State Highway 619, 0.5 mi northwest of intersection of State Highways 619 and 622, and 0.5 mi northwest of Bridgetown. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 235 ft, screened 225 to 235 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 30, 1985, to July 24, 1995, bimonthly measurement with chalked tape. Prior to Sept. 30, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 17 ft above sea level, from topographic map. Measuring point: Top of casing, 0.5 ft above land-surface datum prior to Mar 1, 1988; 0.8 ft thereafter.

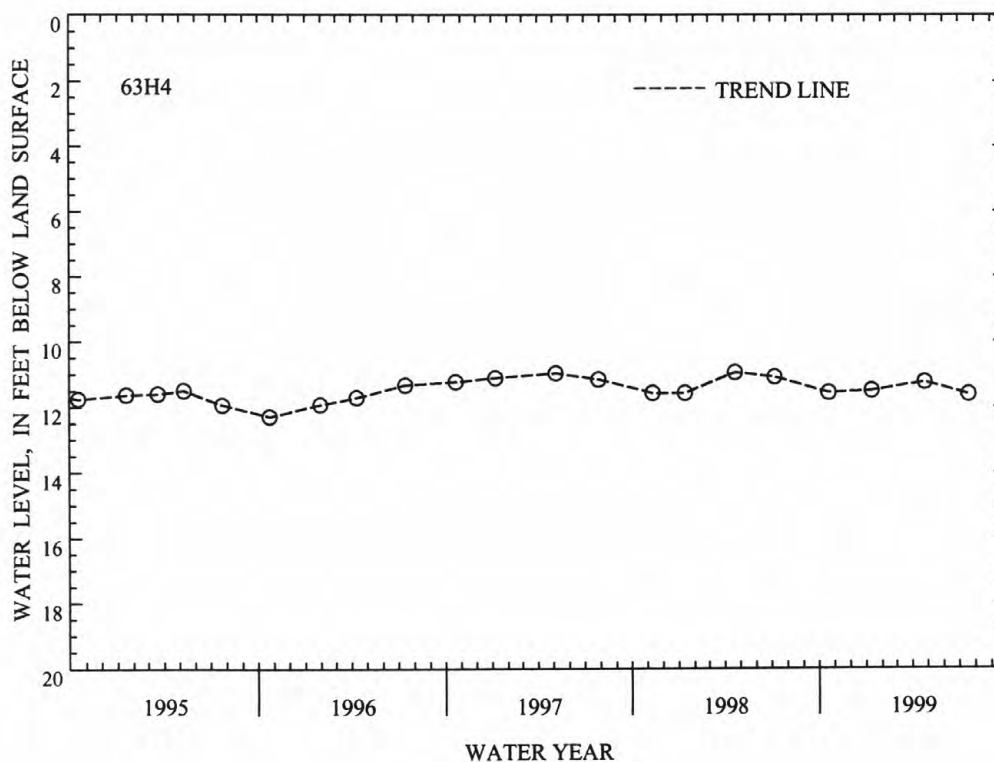
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--October 1977 to current year. Unpublished records available prior to October 1987 in file of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.15 ft below land-surface datum, May 1, 1979; lowest measured, 12.56 ft below land-surface datum, Nov. 11, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	11.55	JAN 13	11.49	APR 26	11.23	JUL 20	11.60
WATER YEAR 1999		HIGHEST	11.23	APR 26, 1999			
		LOWEST	11.60	JUL 20, 1999			



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

37270507555902. Local number, 63H 5 SOW 103B.

LOCATION.--Lat 37°27'05", long 75°55'59", Hydrologic Unit 02080109, 0.2 mi north of State Highway 619, 0.5 mi northwest of intersection of State Highways 619 and 622, and 0.5 mi northwest of Bridgetown. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 132 ft, screened 122 to 132 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 30, 1985, to July 24, 1995, bimonthly measurement with chalked tape. Prior to Sept. 30, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 17 ft above sea level, from topographic map. Measuring point: Top of casing, 0.55 ft above land-surface datum prior to Mar. 1, 1988; 1.25 ft thereafter.

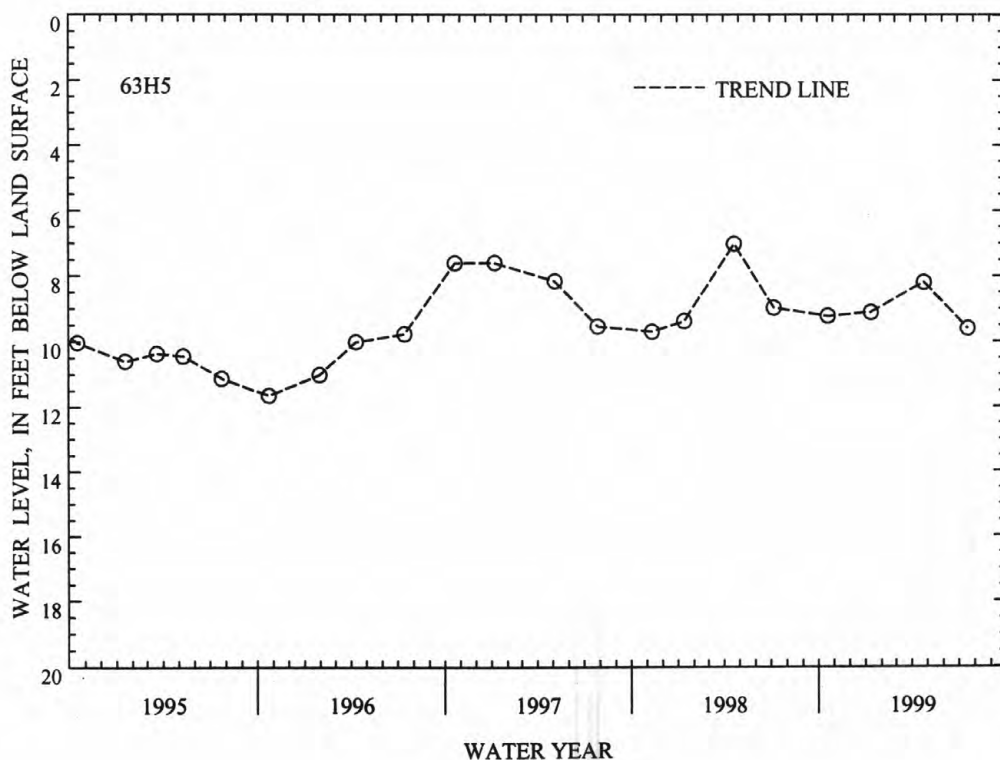
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

PERIOD OF RECORD.--October 1977 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.90 ft below land-surface datum, Feb. 1, 1979; lowest measured, 12.00 ft below land-surface datum, Jan. 9, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	9.22	JAN 13	9.11	APR 26	8.19	JUL 20	9.60
WATER YEAR 1999	HIGHEST	8.19	APR 26, 1999				
	LOWEST	9.60	JUL 20, 1999				



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

372705075555903. Local number, 63H 6 SOW 103A.

LOCATION.--Lat 37°27'05", long 75°55'59", Hydrologic Unit 02080109, 0.2 mi north of State Highway 619, 0.5 mi northwest of intersection of State Highways 619 and 622, and 0.5 mi northwest of Bridgetown. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 37 ft, screened 27 to 37 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 30, 1985, to July 24, 1995, bimonthly measurement with chalked tape. Prior to Sept. 30, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 17 ft above sea level, from topographic map. Measuring point: Top of casing, 0.2 ft above land-surface datum.

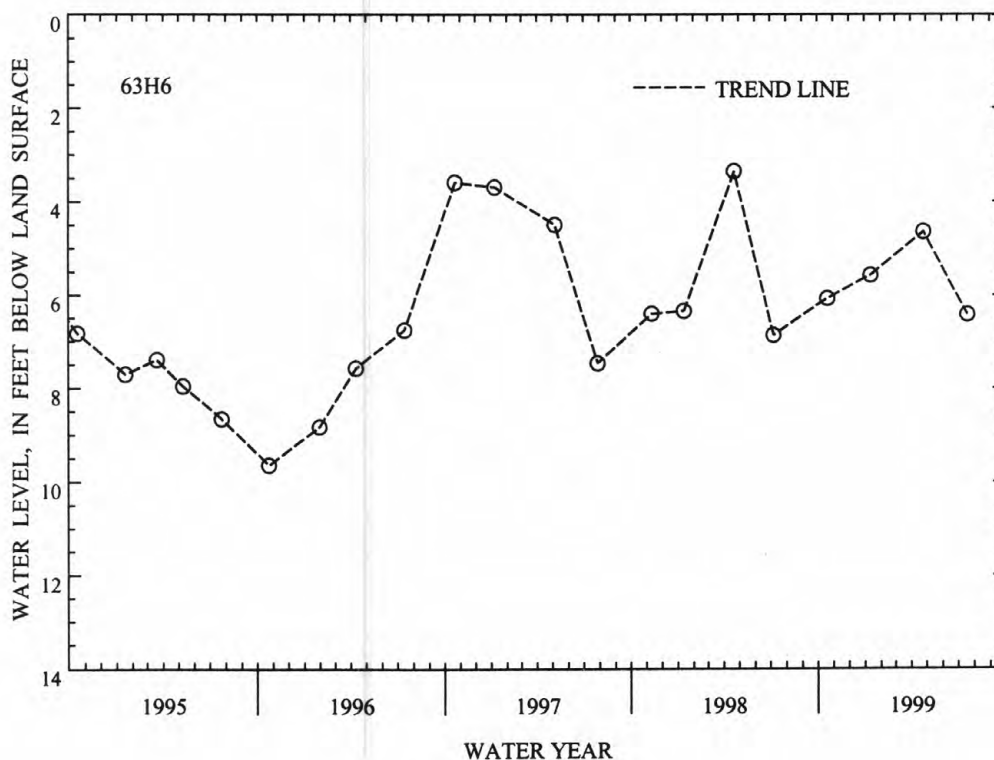
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--October 1977 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.94 ft below land-surface datum, Aug. 2, 1979; lowest measured, 9.93 ft below land-surface datum, Jan. 9, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	6.07	JAN 13	5.57	APR 26	4.64	JUL 20	6.42
WATER YEAR 1999	HIGHEST	4.64	APR 26, 1999				
	LOWEST	6.42	JUL 20, 1999				



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

373230075541001. Local number, 63J 1 SOW 113A.

LOCATION.--Lat 37°32'16", long 75°54'07", Hydrologic Unit 02080109, 0.15 mi north of State Highway 183, 0.4 mi east of intersection of State Highways 183 and 611, and 1.3 mi west of Wardtown. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 120 ft, screened 110 to 120 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 22 ft above sea level, from topographic map. Measuring point: Top of casing, 1.32 ft above land-surface datum prior to Oct. 6, 1988; 1.5 ft thereafter.

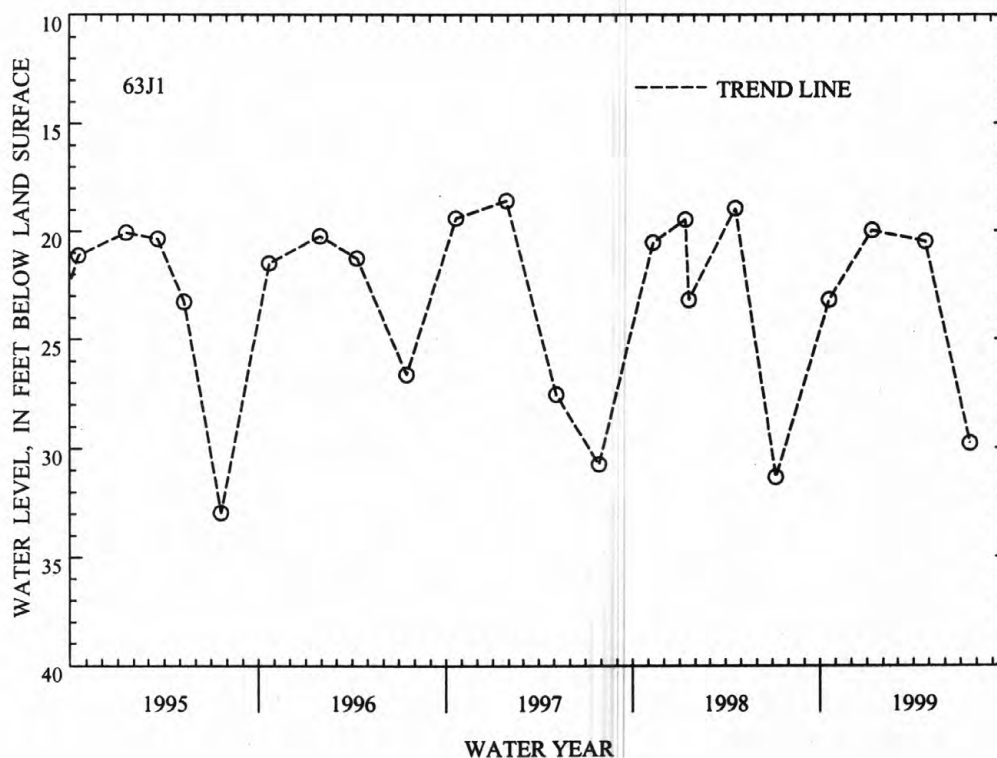
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage.

PERIOD OF RECORD.--July 1981 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 17.79 ft below land-surface datum, Apr. 21, 1983; lowest measured, 32.94 ft below land-surface datum, July 20, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	23.18	JAN 13	19.97	APR 26	20.48	JUL 20	29.77
WATER YEAR 1999		HIGHEST	19.97	JAN 13, 1999			
		LOWEST	29.77	JUL 20, 1999			



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

373230075541002. Local number, 63J 2 SOW 113B.

LOCATION.--Lat 37°32'16", long 75°54'07", Hydrologic Unit 02080109, 0.15 mi north of State Highway 183, 0.40 mi east of intersection of State Highways 183 and 611, and 1.3 mi west of Wardtown. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 225 ft, screened 215 to 225 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 22 ft above sea level, from topographic map. Measuring point: Top of casing, 0.52 ft above land-surface datum prior to Oct. 6, 1988; 1.3 ft thereafter.

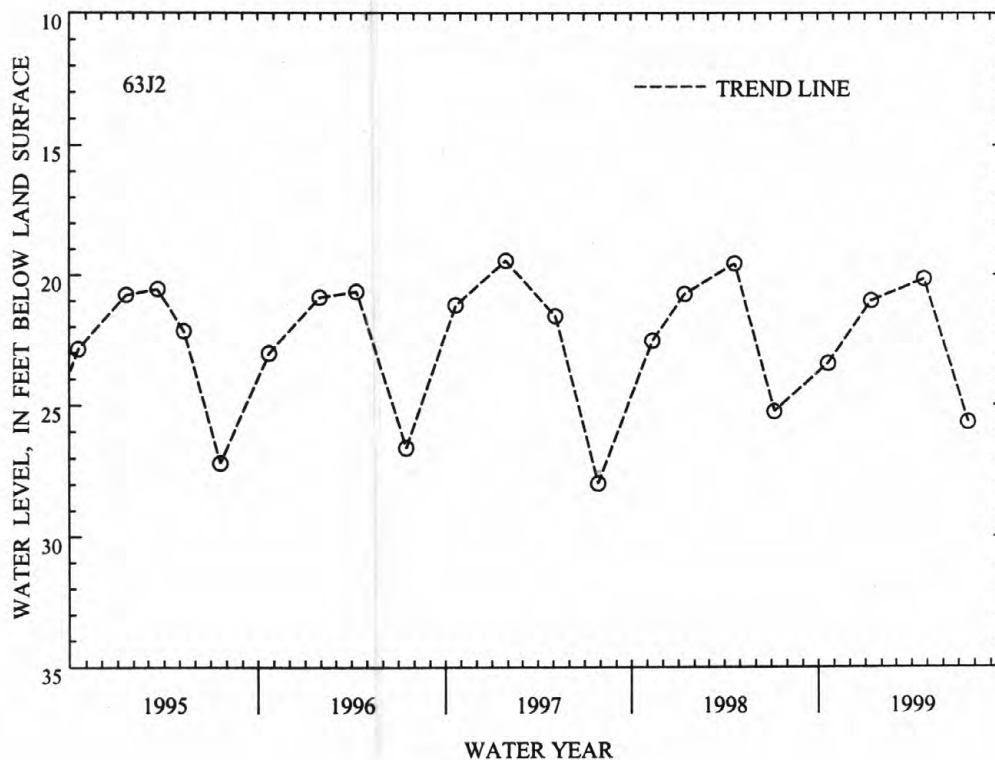
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage.

PERIOD OF RECORD.--July 1981 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 18.20 ft below land-surface datum, Apr. 21, 1983; lowest measured, 27.96 ft below land-surface datum, July 28, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	23.40	JAN 13	21.00	APR 26	20.15	JUL 20	25.64
WATER YEAR 1999		HIGHEST	20.15	APR 26, 1999			
		LOWEST	25.64	JUL 20, 1999			



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

373230075541003. Local number, 63J 3 SOW 113C.

LOCATION.--Lat 37°32'16", long 75°54'07", Hydrologic Unit 02080109, 0.15 mi north of State Highway 183, 0.4 mi east of intersection of State Highways 183 and 611, and 1.3 mi west of Wardtown. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 290 ft, screened 280 to 290 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 20, 1995, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 22 ft above sea level, from topographic map. Measuring point: Top of casing, 1.44 ft above land-surface datum.

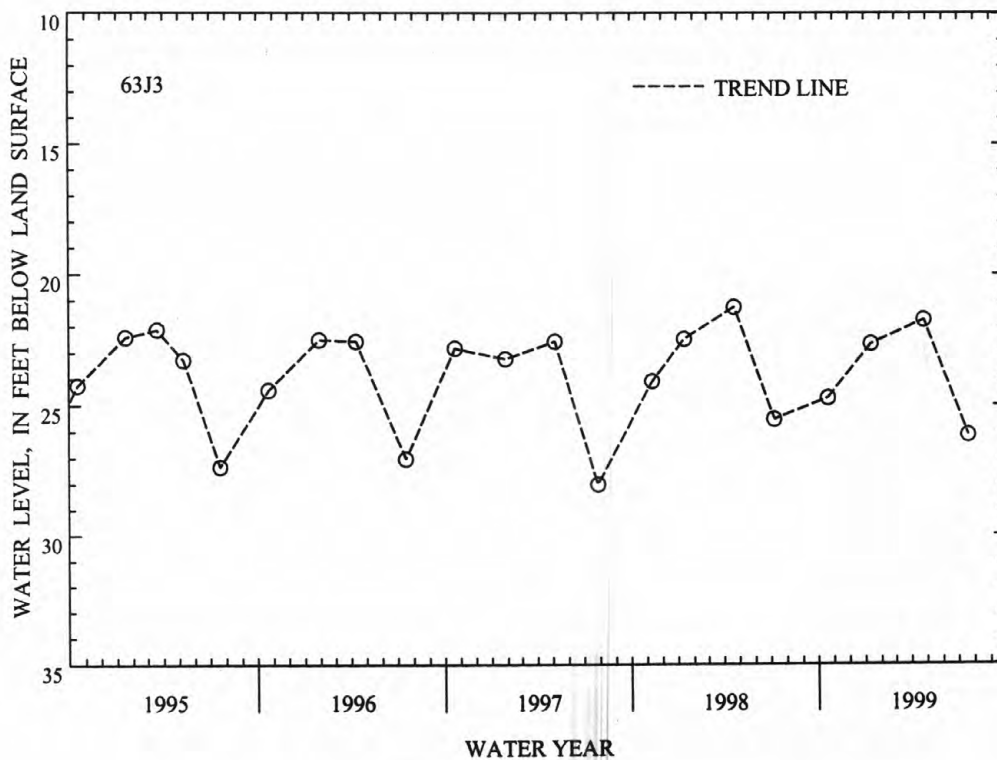
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage.

PERIOD OF RECORD.--July 1981 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.26 ft below land-surface datum, Apr. 21, 1983; lowest measured, 28.02 ft below land-surface datum, July 28, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	24.72	JAN 13	22.65	APR 26	21.73	JUL 20	26.13
WATER YEAR 1999		HIGHEST	21.73	APR 26, 1999			
		LOWEST	26.13	JUL 20, 1999			



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

373059075484501. Local number, 64J 9 SOW 112A.

LOCATION.--Lat 37°30'59", long 75°48'45", Hydrologic Unit 02080109, 100 ft northeast of State Highway 660, 0.3 mi southeast of intersection of State Highways 660 and 600, and 0.3 mi west of Willis Wharf. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 135 ft, screened 125 to 135 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 30, 1985, to July 24, 1995, bimonthly measurement with chalked tape. Prior to Sept. 30, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 30 ft above sea level, from topographic map. Measuring point: Top of casing, at land-surface datum prior to Feb. 29, 1988; 0.7 ft thereafter.

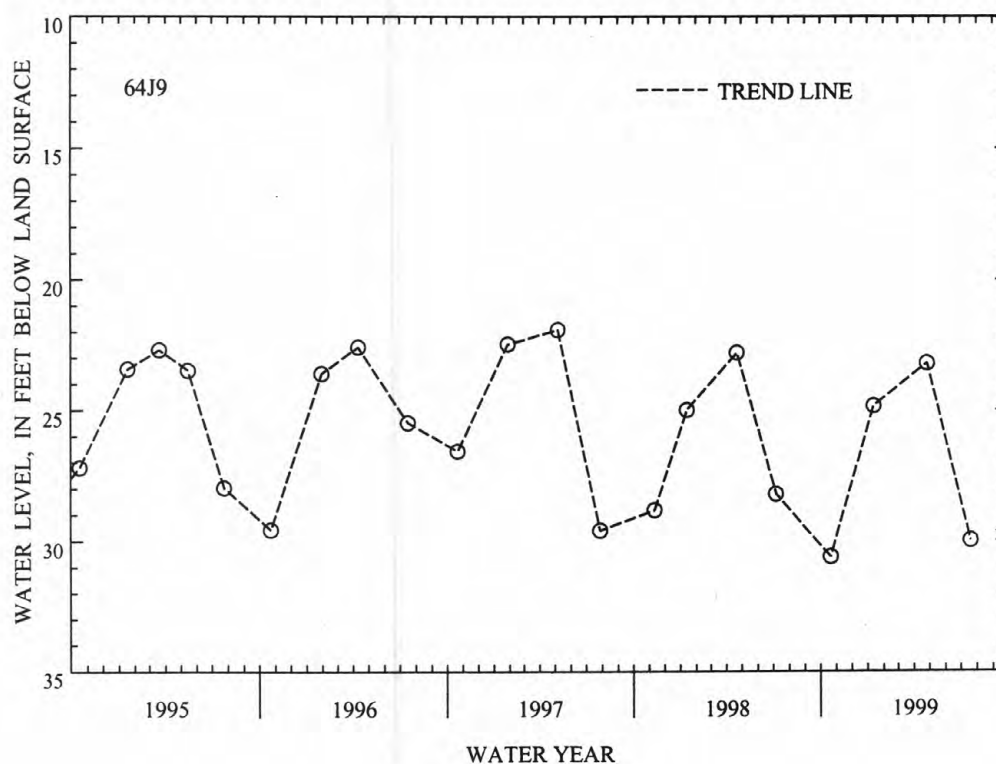
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--July 1979 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 21.19 ft below land-surface datum, Feb. 22, 1993; lowest measured, 33.57 ft below land-surface datum, July 18, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	30.60	JAN 13	24.83	APR 27	23.20	JUL 20	29.98
WATER YEAR 1999		HIGHEST	23.20	APR 27, 1999			
		LOWEST	30.60	OCT 21, 1998			



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

373059075484502. Local number, 64J 10 SOW 112B.

LOCATION.--Lat 37°30'59", long 75°48'45", Hydrologic Unit 02080109, 100 ft northeast of State Highway 660, 0.3 mi southeast of intersection of State Highways 600 and 660, and 0.3 mi west of Willis Wharf. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 210 ft, screened 200 to 210 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 5, 1985 to Oct. 23, 1995, continuous strip-chart recorder. Prior to Oct. 5, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 30 ft above sea level, from topographic map. Measuring point: Top of recorder shelf, 1.5 ft above land-surface datum prior to Aug. 12, 1987; 1.6 ft thereafter.

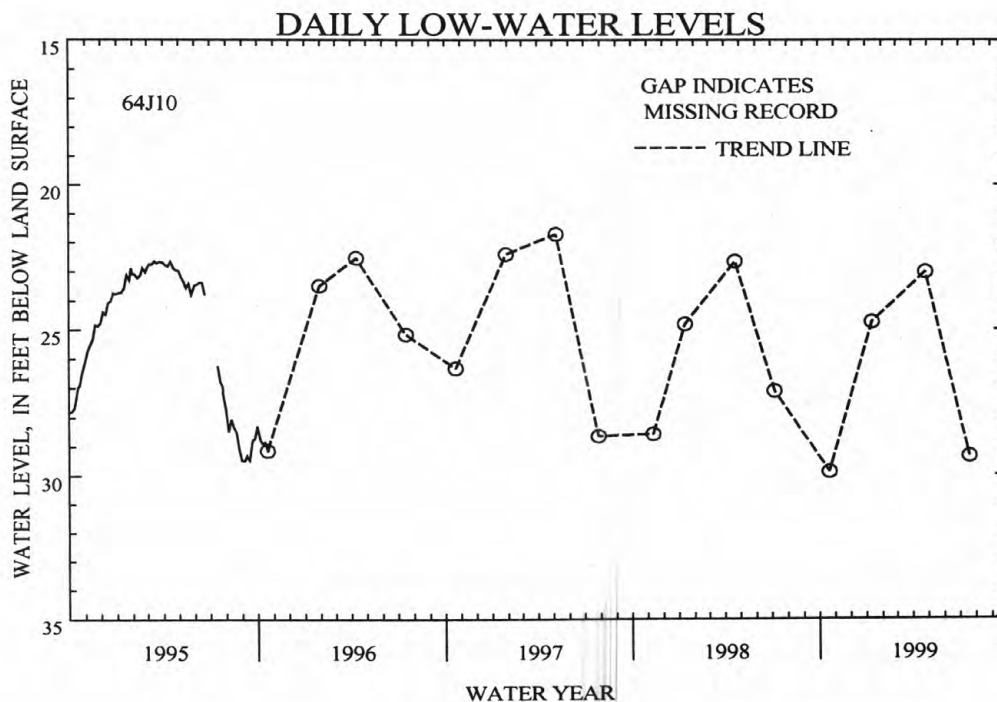
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level influenced by seasonal and tidal effects. Missing record due to recorder malfunction.

PERIOD OF RECORD.--July 1979 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 20.42 ft below land-surface datum, Mar. 13, 1993; lowest measured, 31.29 ft below land-surface datum, Oct. 1, 1979.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	29.87	JAN 13	24.73	APR 27	23.00	JUL 20	29.34
WATER YEAR 1999	HIGHEST	23.00	APR 27, 1999				
	LOWEST	29.87	OCT 21, 1998				



GROUND-WATER LEVELS

NORTHAMPTON COUNTY

373059075484503. Local number, 64J 11 SOW 112C.

LOCATION.--Lat 37°30'59", long 75°48'45", Hydrologic Unit 02080109, 100 ft northeast of State Highway 660, 0.3 mi southeast of intersection of State Highways 600 and 660, and 0.3 mi west of Willis Wharf. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 313 ft, screened 303 to 313 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 30, 1985, to July 24, 1995, bimonthly measurement with chalked tape. Prior to Sept. 30, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 30 ft above sea level, from topographic map. Measuring point: Top of casing, 0.4 ft above land-surface datum prior to Apr. 27, 1987; 0.65 ft thereafter.

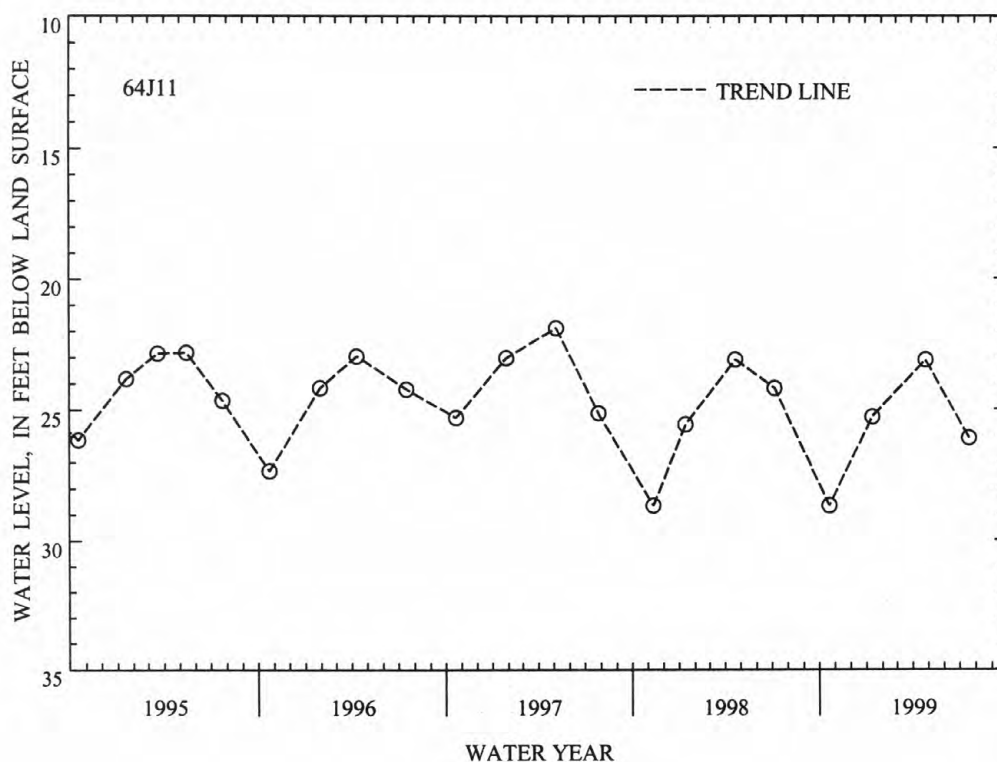
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--July 1979 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 20.78 ft below land-surface datum, Mar. 29, 1984; lowest measured, 35.70 ft below land-surface datum, Dec. 5, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 21	28.68	JAN 13	25.29	APR 27	23.12	JUL 20	26.10
WATER YEAR 1999	HIGHEST	23.12	APR 27, 1999				
	LOWEST	28.68	OCT 21, 1998				



GROUND-WATER LEVELS

ORANGE COUNTY

381002078094201. Local number, 45P 1 SOW 030.

LOCATION.--Lat 38°10'02", long 78°09'42", Hydrologic Unit 02080106, off U.S. Highway 15, 2.3 mi north of Gordonsville. Owner: M. L. Johnson.

AQUIFER.--Phyllite of Evington Group of Cambrian or Precambrian age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in., depth 98 ft, length of casing unknown.

INSTRUMENTATION.--Occasional measurement with chalked taped by Virginia Department of Environmental Quality - Water Division personnel. Prior to Oct 31, 1995, continuous strip-chart recorder.

DATUM.--Elevation of land-surface datum is 480 ft above sea level, from topographic map. Measuring point: Top of casing, 0.40 ft above land-surface datum prior to June 27, 1996; 1.90 ft thereafter.

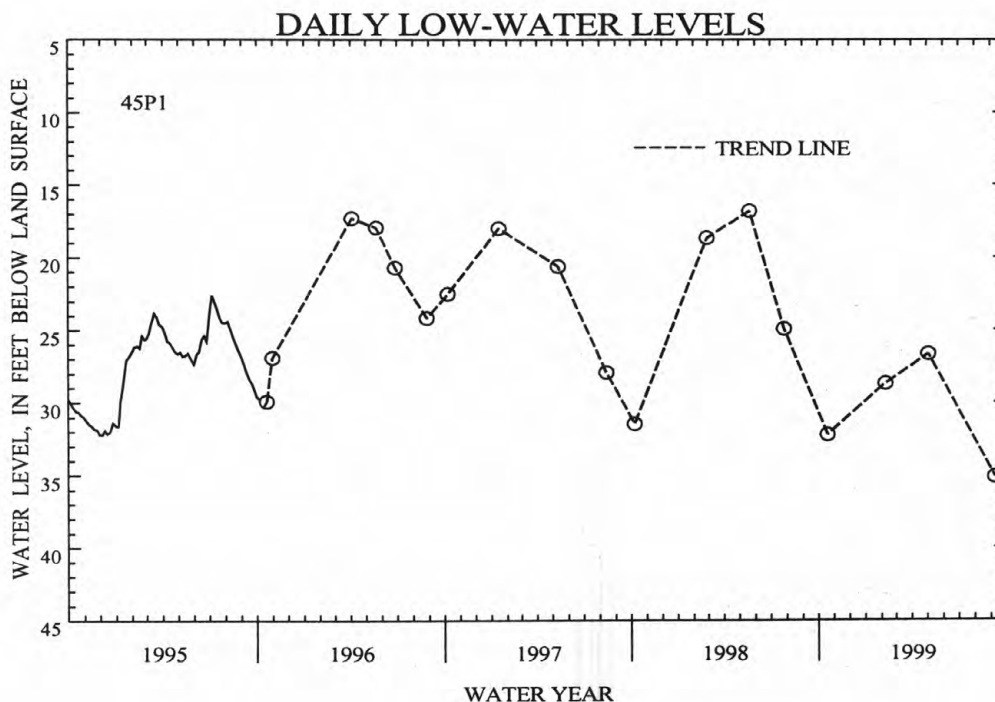
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--February 1965 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 11.83 ft below land-surface datum, Apr. 10, 1973; lowest recorded, 35.90 ft below land-surface datum, Jan. 31, 1966.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	32.20	FEB 09	28.70	MAY 03	26.65	SEP 09	35.12
WATER YEAR 1999		HIGHEST	26.65	MAY 03, 1999		LOWEST	35.12
			35.12	SEP 09, 1999			



GROUND-WATER LEVELS

PATRICK COUNTY

364732080070301. Local number, 30C 1 SOW 010.

LOCATION.--Lat 36°47'32", long 80°07'03", Hydrologic Unit 03010103, 300 ft west of State Highway 623, 1.0 mi northeast of intersection of State Highways 57 and 623, and 6.2 mi west of Philpott. Owner: Commonwealth of Virginia.

AQUIFER.--Lynchburg Group of Late Proterozoic age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6.25 in., depth 250 ft, cased to 9 ft, open hole 9 to 250 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to Oct. 1, 1996, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 1,060 ft above sea level, from topographic map. Measuring point: Top of casing, 0.5 ft above land-surface datum.

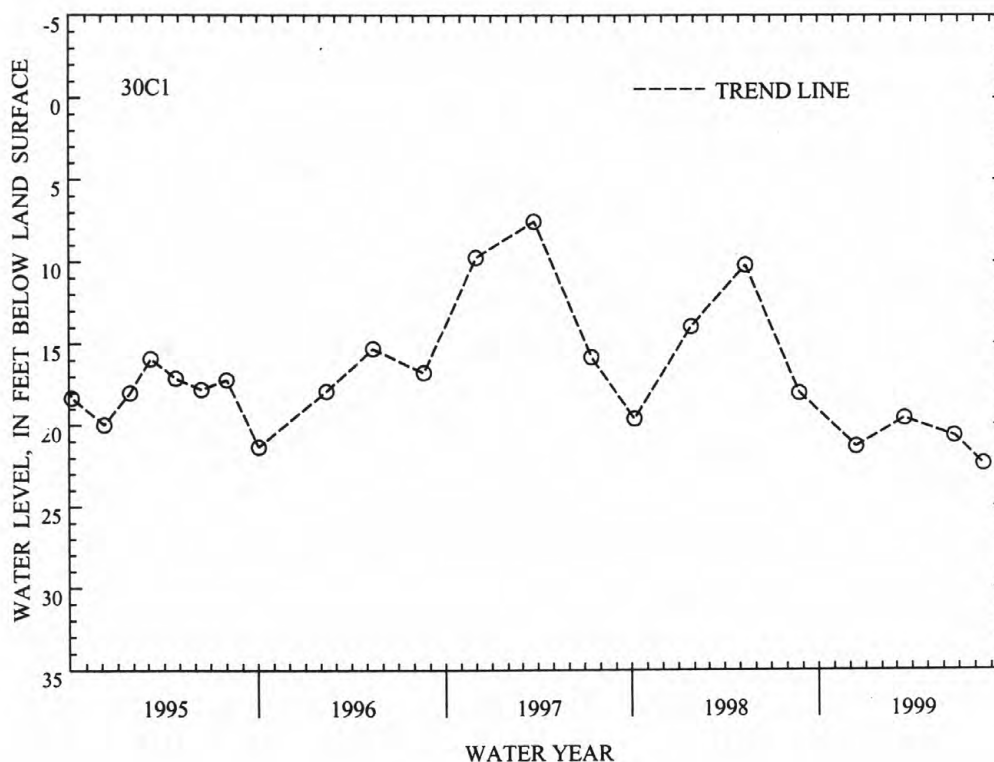
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--May 1966 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.98 ft below land-surface datum, Mar. 23, 1993; lowest measured, 23.15 ft below land-surface datum, Jan. 10, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 14	21.33	MAR 18	19.59	JUN 23	20.67	AUG 18	22.39
WATER YEAR 1999		HIGHEST	19.59	MAR 18, 1999			
		LOWEST	22.39	AUG 18, 1999			



GROUND-WATER LEVELS

CITY OF PORTSMOUTH

364823076181501. Local number, 60C 27.

LOCATION.--Lat 36°48'23", long 76°18'15", Hydrologic Unit 02080208, 100 ft east of State Highway 239 (Victory Boulevard), 0.1 mi south of the intersection of State Highway 239 (Victory Boulevard) and State Highway 337 (Elem Avenue) in the city of Portsmouth. Owner: U.S. Department of the Navy.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 2 in., depth 908 ft, screened 903 to 908 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 18 ft above sea level, from topographic map. Measuring point: Top of casing, 2.5 ft above land-surface datum.

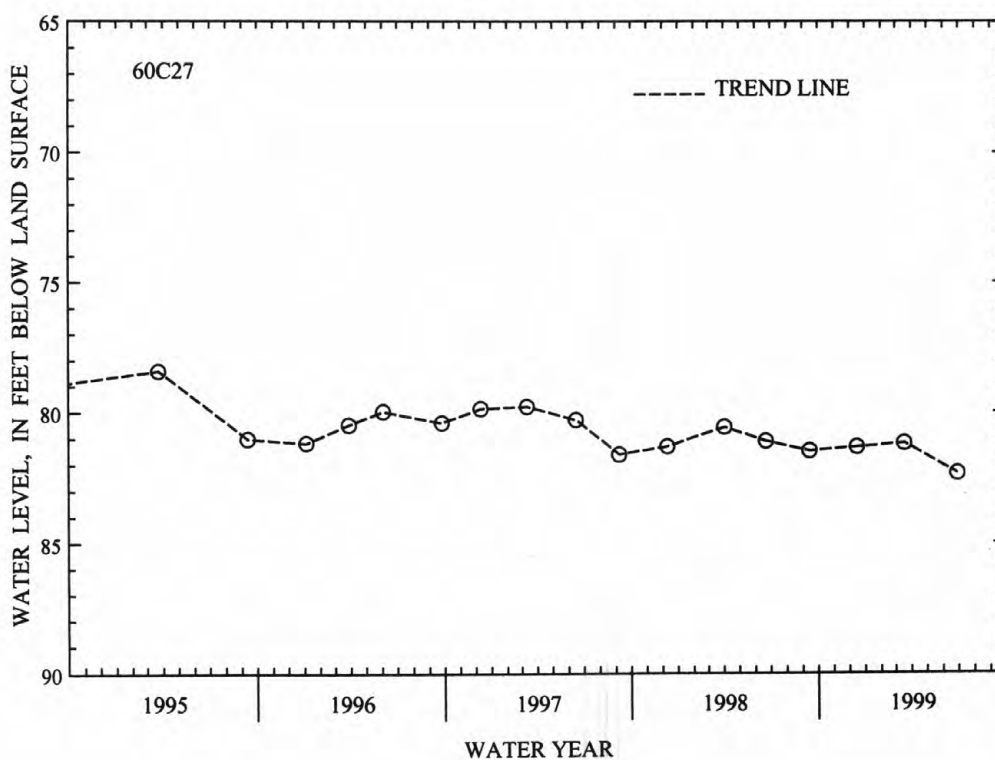
REMARKS.--Water level affected by regional drawdown.

PERIOD OF RECORD.--June 1985 to current year. Unpublished records available prior to October 1987 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 63.65 ft below land-surface datum, June 19, 1985; lowest measured, 82.33 ft below land-surface datum, June 29, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 16	81.33	MAR 18	81.18	JUN 29	82.33
WATER YEAR 1999	HIGHEST	81.18	MAR 18, 1999		
	LOWEST	82.33	JUN 29, 1999		



GROUND-WATER LEVELS

CITY OF PORTSMOUTH

365313076215101. Local number, 60D 2.

LOCATION.--Lat 36°53'13", long 76°21'51", Hydrologic Unit 02080208, 1.1 mi east of the main gate of the U.S. Naval Supply Center on Main Street in Building 285, 2.0 mi northwest of West Norfolk in the city of Portsmouth, and 2.25 mi north of the intersection of U.S. Highway 17 and Cedar Lane (Craney Island Road). Owner: U.S. Department of the Navy.

AQUIFER.--Chickahominy-Piney Point aquifer of Eocene-Oligocene age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 8 in. to 170 ft, diameter 4 in. from 170 to 565 ft, depth 565 ft, screened 545 to 565 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

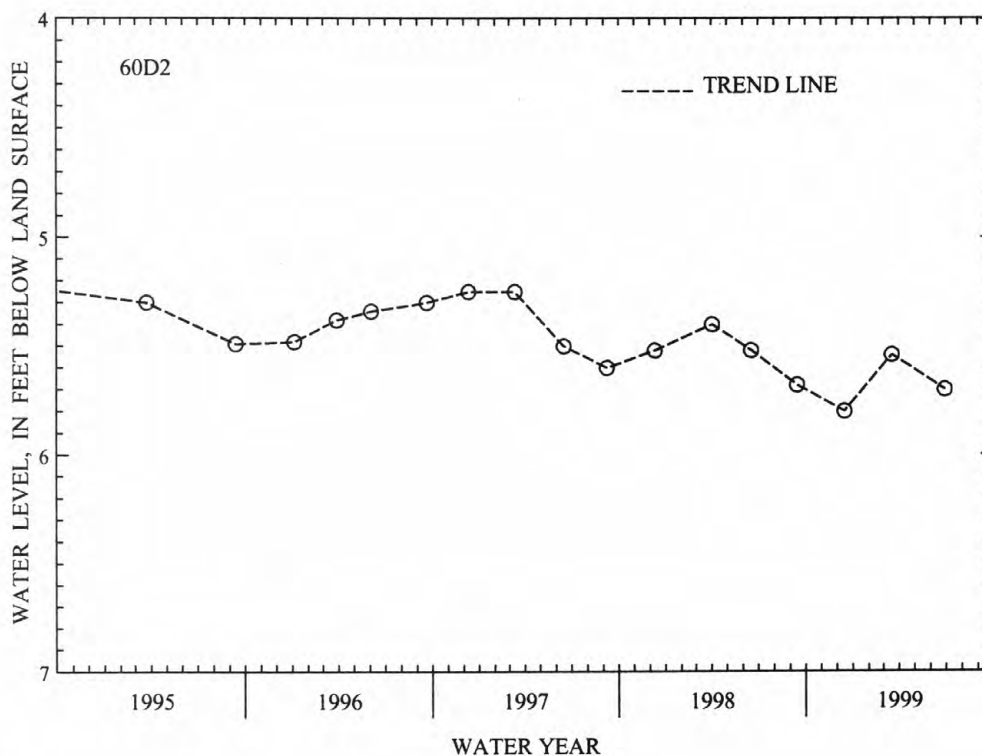
DATUM.--Elevation of land-surface datum is 12 ft above sea level, from topographic map. Measuring point: Top of casing, 0.6 ft above land-surface datum.

PERIOD OF RECORD.--January 1984 to current year. Unpublished records available prior to October 1987 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.01 ft below land-surface datum, Sept. 18, 1985; lowest measured, 5.80 ft below land-surface datum, Dec. 16, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 16	5.80	MAR 18	5.54	JUN 29	5.70
WATER YEAR 1999	HIGHEST	5.54	MAR 18, 1999		
	LOWEST	5.80	DEC 16, 1998		



GROUND-WATER LEVELS

PRINCE GEORGE COUNTY

370501077214401. Local number, 52E 2.

LOCATION.--Lat 37°05'01", long 77°21'44", Hydrologic Unit 03010201, at Virginia Department of Transportation - Carson Area Headquarters, 1500 ft west of intersection of State Highway 35 and Interstate 95. Owner: U.S. Geological Survey.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 2 in., depth 69.47 ft, screened 64.47 ft to 69.47 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to October 1998, monthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 140 ft above sea level. Measuring point: Top of casing, 0.85 ft above land-surface datum.

REMARKS.--Well drilled as part of Fall Zone ground-water study.

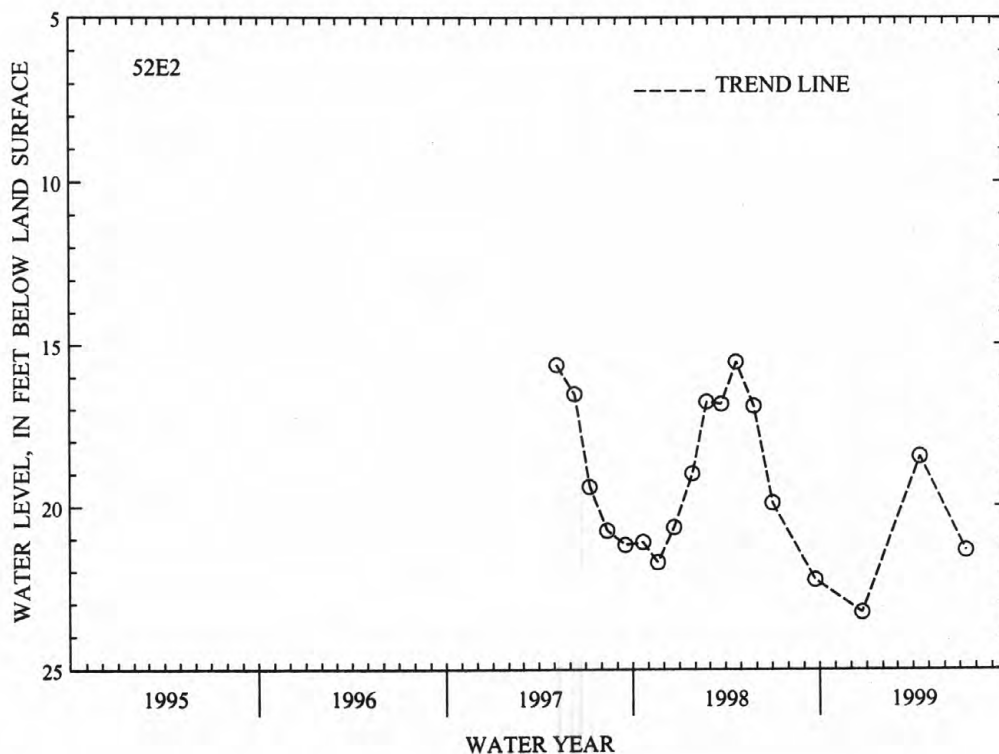
PERIOD OF RECORD.--May 1997 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 15.54 ft below land-surface datum, Apr. 23, 1998; lowest measured, 23.26 ft below land-surface datum, Dec. 23, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 23	23.26	APR 15	18.47	JUL 13	21.36

WATER YEAR 1999	HIGHEST	18.47	APR 15, 1999
	LOWEST	23.26	DEC 23, 1998



GROUND-WATER LEVELS

PRINCE GEORGE COUNTY

371315077171901. Local number, 52F 1 SOW 038.

LOCATION.--Lat 37°13'15", long 77°17'19", Hydrologic Unit 03010202, 0.1 mi north of State Highway 106 in Prince George. Owner: Prince George County.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in., depth 180 ft, cased to 170 ft, open hole 170 to 180 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 10, 1985, to July 10, 1995, bimonthly measurement with chalked tape. May 25, 1974, to Oct. 9, 1985, occasional measurement with chalked tape. Jan. 31, 1971, to May 25, 1974, continuous strip-chart recorder. Prior to Jan. 31, 1971, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 132 ft above sea level, from topographic map. Measuring point: Top of recorder shelf, 3.4 ft above land-surface datum.

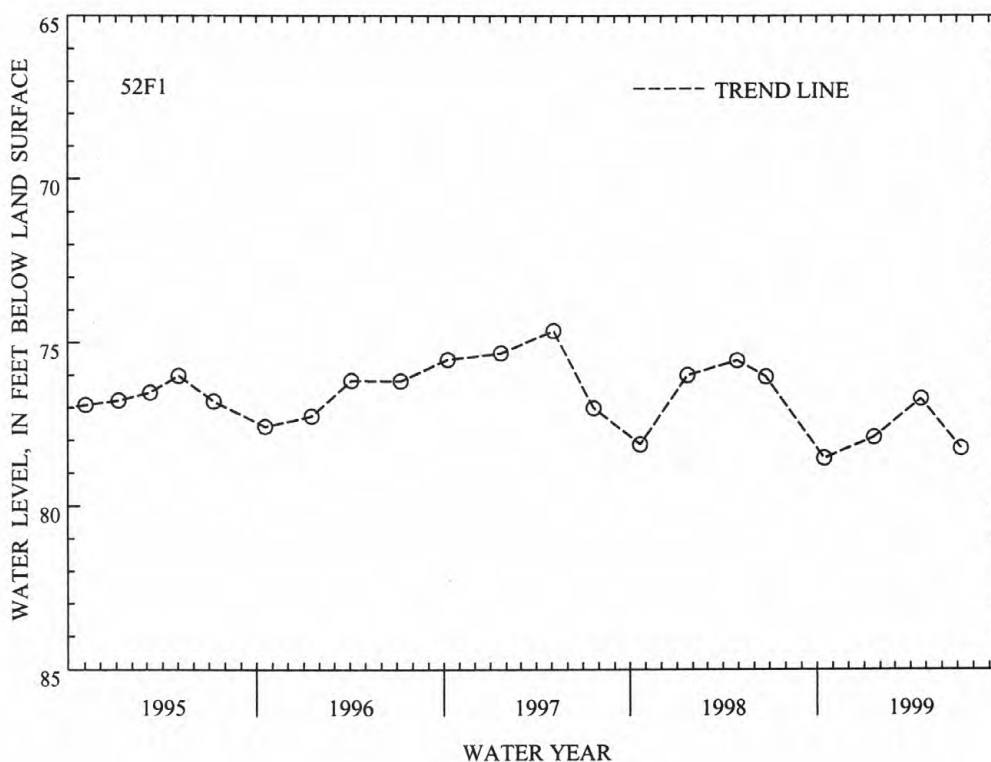
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

PERIOD OF RECORD.--December 1970 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 69.32 ft below land-surface datum, Feb. 4, 1980; lowest measured, 78.54 ft below land-surface datum, Oct. 15, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	78.54	JAN 20	77.90	APR 22	76.72	JUL 08	78.24
WATER YEAR 1999	HIGHEST	76.72	APR 22, 1999				
	LOWEST	78.54	OCT 15, 1998				



GROUND-WATER LEVELS

PRINCE WILLIAM COUNTY

384931077420301. Local number, 49U 1.

LOCATION.--Lat 38°49'30", long 77°42'08", Hydrologic Unit 02070010, 500 ft north of State Highway 55, 0.8 mi east of Thoroughfare Gap, and 3.7 mi west of Haymarket. Owner: Virginia Department of Transportation.

AQUIFER.--Waterfall Formation of Early Jurassic age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 7 in., depth 345 ft, cased to 20 ft, open hole 20 to 345 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to February 1980, continuous strip-chart recorder.

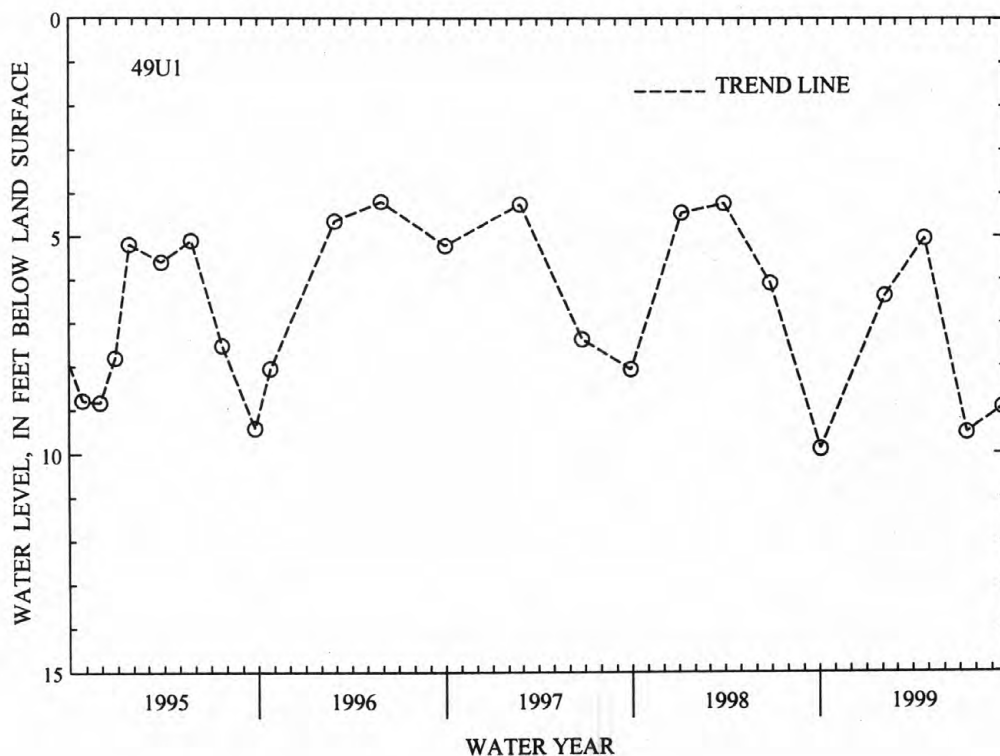
DATUM.--Elevation of land-surface datum is 383 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.

PERIOD OF RECORD.--October 1968 to current year. Unpublished records available prior to May 1969 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.59 ft below land-surface datum, Mar. 19, 1975; lowest measured, 10.33 ft below land-surface datum, Oct. 14, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 05	9.89	FEB 08	6.37	APR 26	5.04	JUL 16	9.52	SEP 24	8.94
WATER YEAR 1999		HIGHEST	5.04	APR 26, 1999					
		LOWEST	9.89	OCT 05, 1998					



GROUND-WATER LEVELS

PRINCE WILLIAM COUNTY

385607077381101. Local number, 49V 1.

LOCATION.--Lat 38°56'07", long 77°38'11", Hydrologic Unit 02070010, near intersection of State Highways 600 and 615, 2.8 mi south of Aldie. Owner: J. H. Hutchison.

AQUIFER.--Turkey Run Formation of Early Jurassic age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 7 in., depth 165 ft, cased to 10 ft, open hole 10 to 165 ft.

INSTRUMENTATION.--Occasional measurements with chalked tape by USGS personnel. Prior to Oct. 1, 1995, digital recorder--60-minute punch. Prior to June 19, 1979, continuous strip-chart recorder.

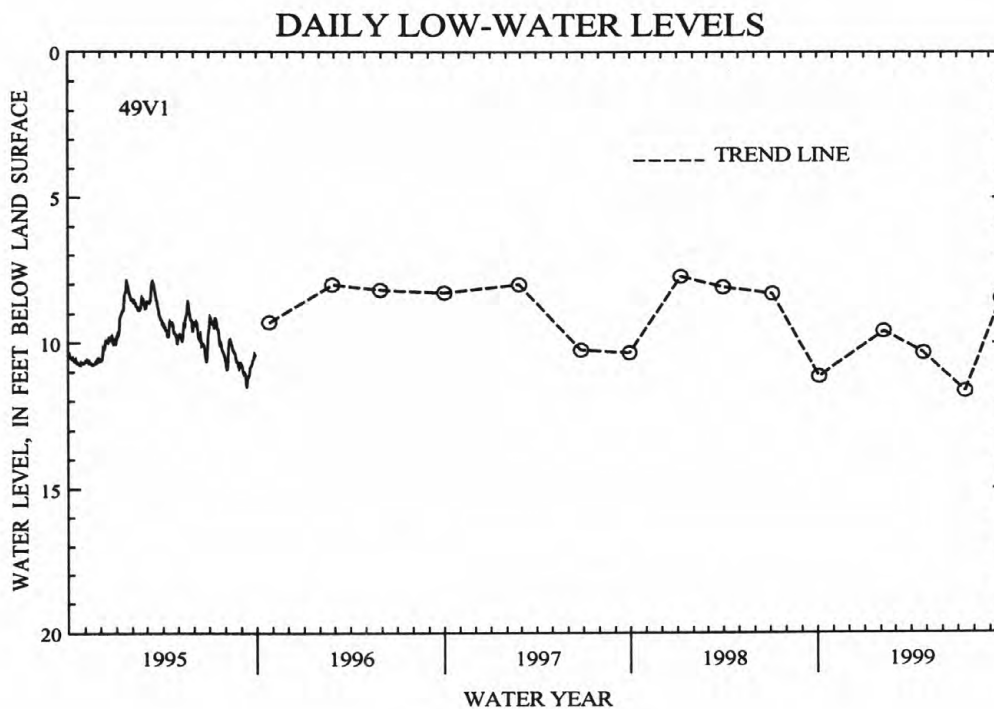
DATUM.--Elevation of land-surface datum is 420 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum. Readings from 1979 to 1981 should be 0.7 ft lower than previously published.

PERIOD OF RECORD.--November 1968 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 6.85 ft below land-surface datum, Oct. 12, 1979; lowest recorded, 13.09 ft below land-surface datum, Sept. 16, 1991.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 05	11.14	FEB 08	9.58	APR 26	10.33	JUL 16	11.65	SEP 24	8.46
WATER YEAR 1999		HIGHEST	8.46	SEP 24, 1999					
		LOWEST	11.65	JUL 16, 1999					



GROUND-WATER LEVELS

PRINCE WILLIAM COUNTY

383423077245901. Local number, 51S 7.

LOCATION.--Lat 38°34'23", long 77°24'59", Hydrologic Unit 02070011, in Prince William Forest Park, 700 ft north of State Highway 619, 0.7 mi southeast of Belfair Crossroads, and 4.6 mi south of Independent Hill. Owner: National Park Service.

AQUIFER.--Lunga Reservoir Formation of Cambrian age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in., depth 490 ft, cased to 50 ft, open hole 50 to 490 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Dec. 21, 1982 to Feb. 1, 1996, digital recorder--60-minute punch. Prior to Dec. 21, 1982, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 295 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.

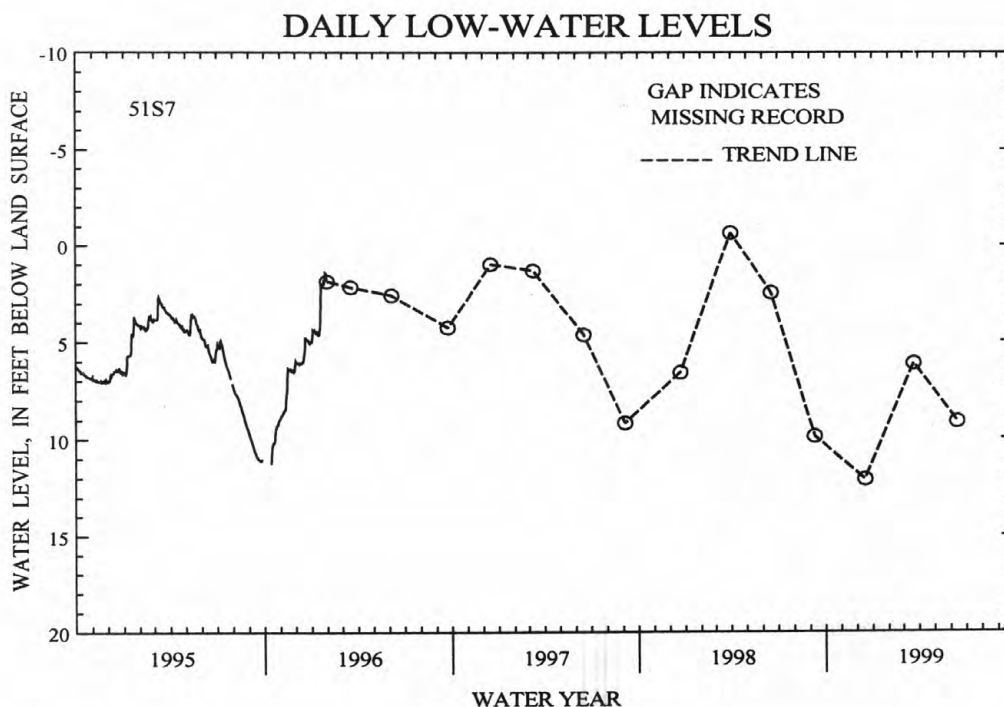
REMARKS.--Missing record due to recorder malfunction. Lowest water level for the 1995 water year may have occurred during this period.

PERIOD OF RECORD.--September 1973 to November 1975, December 1977 to current year. Unpublished records available prior to December 1977 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.66 ft above land-surface datum, Apr. 1, 1998; lowest recorded, 12.95 ft below land-surface datum, Nov. 16, 17, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 17	12.10	MAR 22	6.13	JUN 14	9.12
WATER YEAR 1999	HIGHEST	6.13	MAR 22, 1999		
	LOWEST	12.10	DEC 17, 1998		



GROUND-WATER LEVELS

PRINCE WILLIAM COUNTY

383634077151301. Local number, 52S 4.

LOCATION.--Lat 38°36'34", long 77°15'13", Hydrologic Unit 02070010, 193 ft east of Richmond, Fredericksburg, and Potomac (RFP) railroad tracks, 1.1 mi southeast of the intersection of U.S. Highway 1 and State Highway 636 (Featherstone Road), 1.4 mi south of the intersection of State Highway 636 (Featherstone Road) and RFP railroad tracks, and near Woodbridge. Owner: District of Columbia Department of Sanitary Engineering.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 10 in., depth 186 ft, screened 156 to 176 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Aug. 1, 1971, to July 10, 1978, continuous strip-chart recorder. Prior to Aug. 1, 1971, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 28 ft above sea level, from topographic map. Measuring point: Top of casing, 3.3 ft above land-surface datum prior to Aug. 28, 1978; 1.9 ft thereafter.

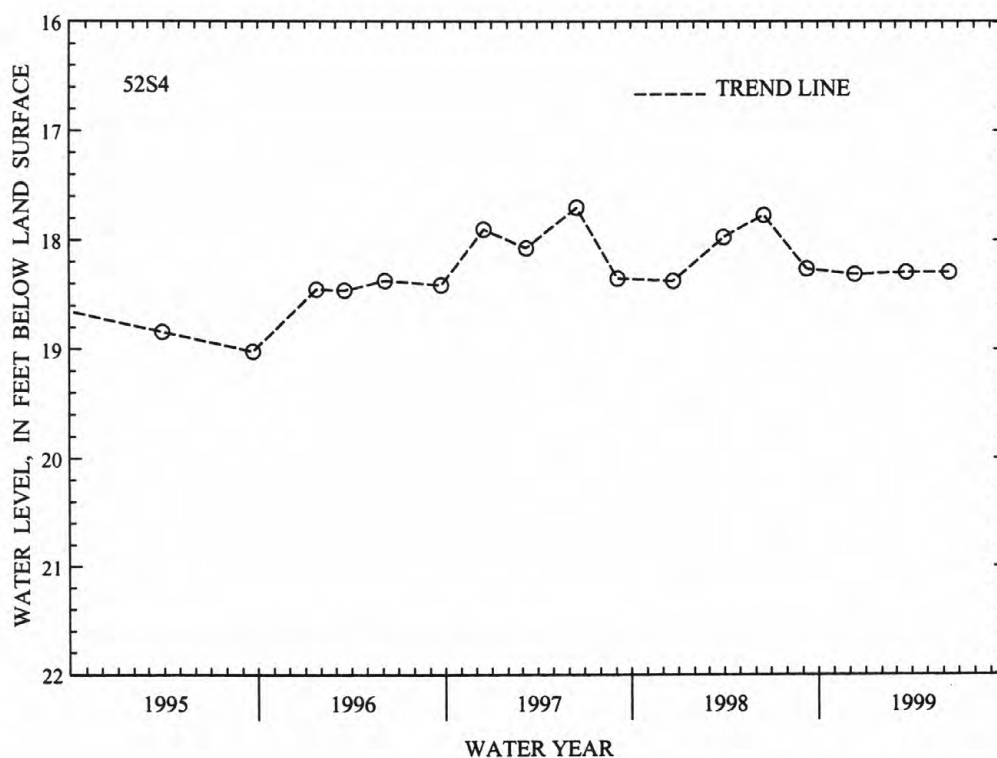
PERIOD OF RECORD.--June 1969 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 17.17 ft below land-surface datum, Apr. 28, 1973; lowest measured, 22.17 ft below land-surface datum, July 1, 1969.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 12	18.31	MAR 22	18.29	JUN 14	18.29

WATER YEAR 1999	HIGHEST	18.29	MAR 22, JUN 14, 1999
	LOWEST	18.31	DEC 12, 1998



GROUND-WATER LEVELS

PRINCE WILLIAM COUNTY

383830077135502. Local number, 53T 2 SOW 029.

LOCATION.--Lat 38°38'30", long 77°13'55", Hydrologic Unit 02070010, at U.S. Army Woodbridge Research Facility, 1.5 mi east of Woodbridge. Owner: U.S. Department of the Army.

AQUIFER.--Lower Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 10 in., depth 162 ft, screened 130 to 156 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 25, 1985, to Oct. 1, 1996, bimonthly measurement with chalked tape. Prior to Sept. 25, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 5 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.

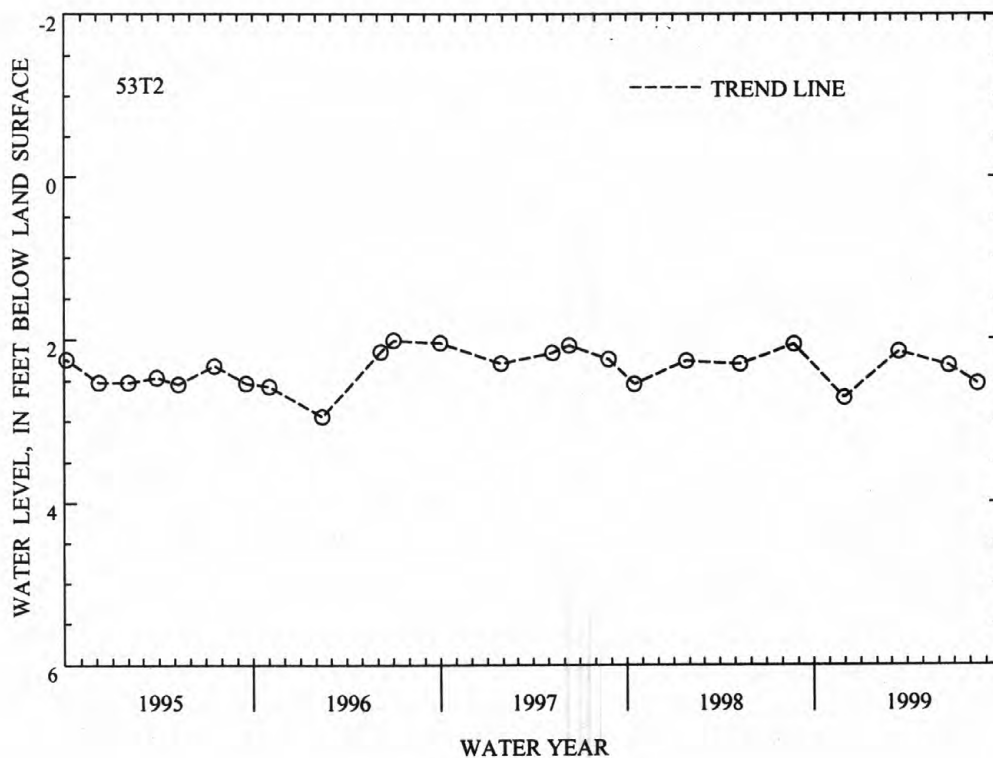
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--March 1970 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.60 ft below land-surface datum, Apr. 4, 1973; lowest measured, 10.35 ft below land-surface datum, Oct. 12, 1977.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 30	2.71	MAR 16	2.15	JUN 21	2.32	AUG 16	2.54
WATER YEAR 1999	HIGHEST	2.15	MAR 16, 1999				
	LOWEST	2.71	NOV 30, 1998				



GROUND-WATER LEVELS

PULASKI COUNTY

370254080374401. Local number, 25E 1 SOW 009.

LOCATION.--Lat 37°02'54", long 80°37'44", Hydrologic Unit 05050001, 300 ft east of State Highway 100, 0.3 mi south of intersection of State Highways 682 and 700, and 1.1 mi south of Dublin. Owner: Commonwealth of Virginia.

AQUIFER.--Elbrook Formation of Middle to Late Cambrian age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in., depth 318 ft, cased to 56 ft, open hole 56 to 318 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to Oct. 1, 1996, bimonthly measurement with chalked tape. Prior to Oct. 1, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 1,880 ft above sea level, from topographic map. Measuring point: Top of casing, at land-surface datum.

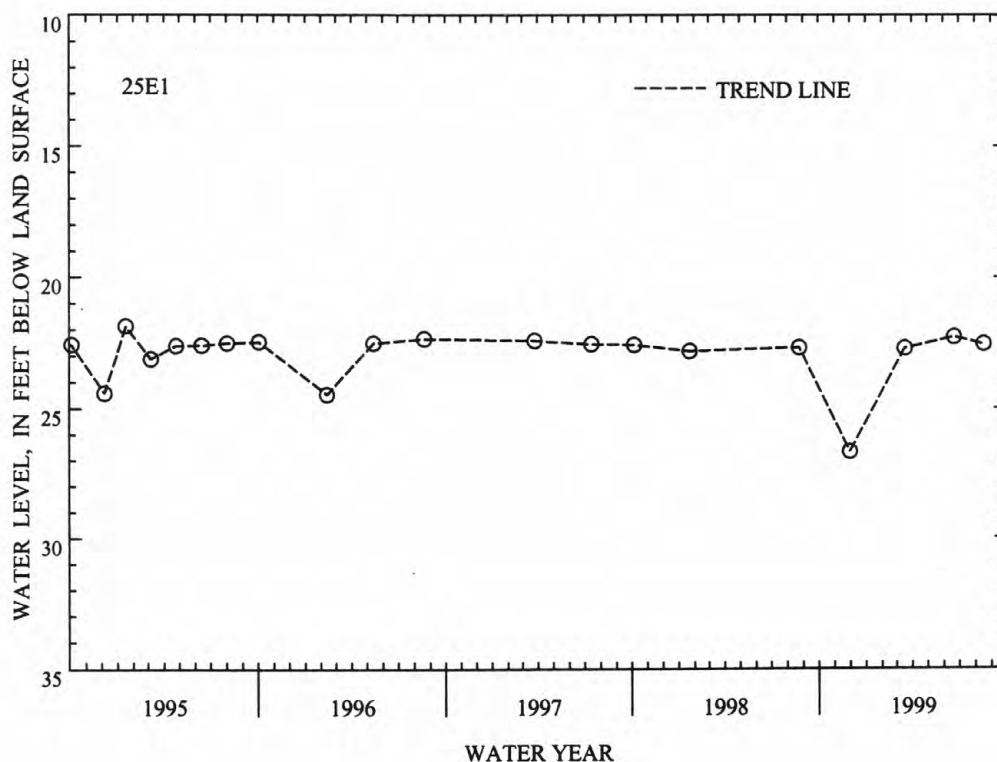
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

PERIOD OF RECORD.--October 1969 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 19.15 ft below land-surface datum, Mar. 31, Apr. 30, 1975; lowest measured, 27.25 ft below land-surface datum, Dec. 13, 1976.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1997 TO SEPTEMBER 1998

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 01	26.67	MAR 18	22.70	JUN 22	22.27	AUG 18	22.54
WATER YEAR 1998		HIGHEST	22.27	JUN 22, 1999			
		LOWEST	26.67	DEC 01, 1998			



GROUND-WATER LEVELS

PULASKI COUNTY

370516080411501. Local number, 25E 2 SOW 059.

LOCATION.--Lat 37°05'16", long 80°41'15", Hydrologic Unit 05050001, 400 ft east of State Highway 100, 0.5 mi south of Dublin. Owner: Town of Dublin.

AQUIFER.--Conococheague Formation of Late Cambrian age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in., depth 370 ft, length of casing unknown.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to Oct. 1, 1996, bimonthly measurement with chalked tape. July 20, 1974, to Oct. 1, 1985, occasional measurement with chalked tape. Prior to July 20, 1974, continuous strip-chart recorder.

DATUM.--Elevation of land-surface datum is 2,170 ft above sea level, from topographic map. Measuring point: Top of casing, at land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

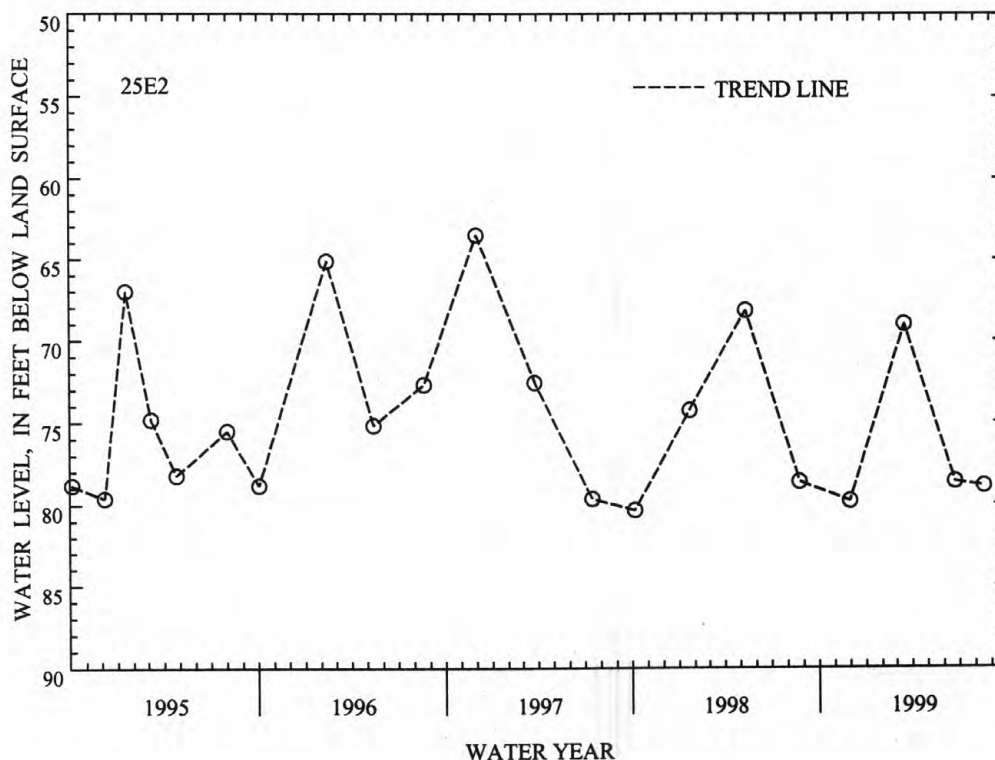
PERIOD OF RECORD.--April 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 60.00 ft below land-surface datum, Mar. 18, 1973; lowest measured, 82.50 ft below land-surface datum, Oct. 5, 1982.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 01	79.80	MAR 18	69.01	JUN 23	78.62	AUG 18	78.89

WATER YEAR 1999	HIGHEST	DATE	WATER YEAR 1999	LOWEST	DATE
	69.01	MAR 18, 1999		79.80	DEC 01, 1998



GROUND-WATER LEVELS

CITY OF ROANOKE

371653079552101. Local number, 31G 1 SOW 008.

LOCATION.--Lat 37°16'53", long 79°55'21", Hydrologic Unit 03010101, 700 ft south of intersection of 10th Street and Orange Avenue in Roanoke. Owner: Nelson-Roanoke Corporation.

AQUIFER.--Rome Formation of Cambrian age. Prior to 1974, reported as Elbrook Formation.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in., depth 48 ft, length of casing unknown.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to Oct. 1, 1996, bimonthly measurement with chalked tape. July 20, 1974, to Sept. 30, 1985, occasional measurement with chalked tape. Prior to July 20, 1974, continuous strip-chart recorder.

DATUM.--Elevation of land-surface datum is 930 ft above sea level, from topographic map. Measuring point: Top of casing, 0.94 ft above land-surface datum.

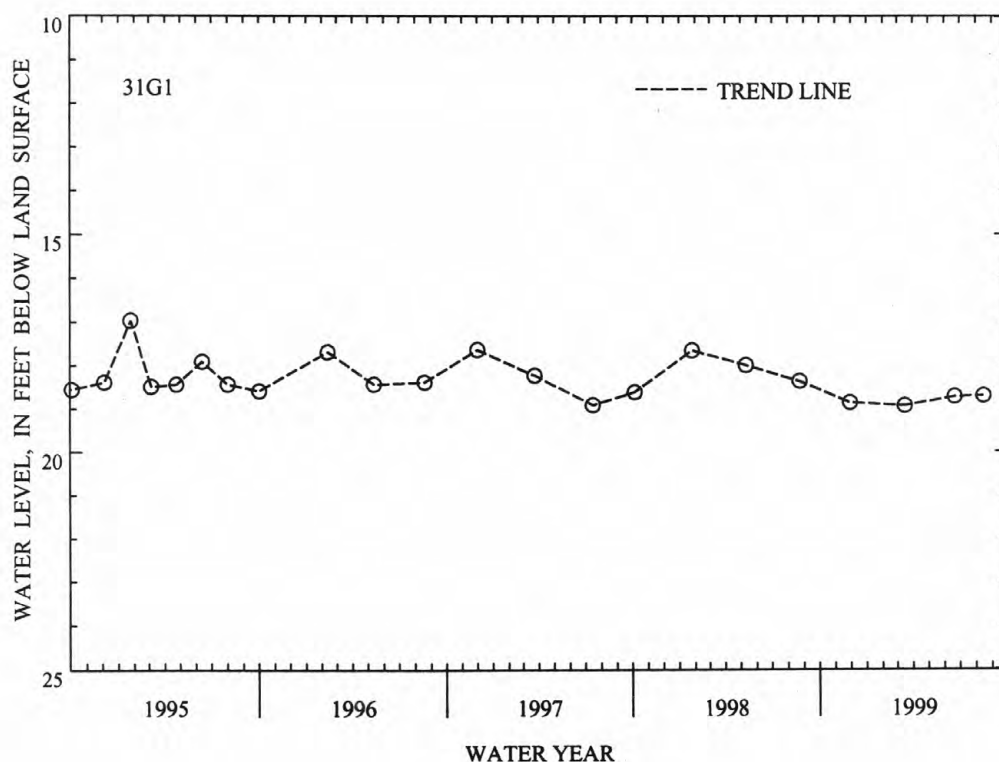
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--August 1966 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 12.36 ft below land-surface datum, Feb. 18, 1986; lowest measured, 19.29 ft below land-surface datum, June 23, 1987.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 30	18.86	MAR 16	18.93	JUN 21	18.72	AUG 16	18.70
WATER YEAR 1999	HIGHEST	18.70	AUG 16, 1999				
	LOWEST	18.93	MAR 16, 1999				



GROUND-WATER LEVELS

ROCKBRIDGE COUNTY

373758079271601. Local number, 35K 1 SOW 063.

LOCATION.--Lat 37°37'58", long 79°27'16", Hydrologic Unit 02080202, 0.35 mi northwest of intersection of State Highways 130 and 684 in Glasgow. Owner: Town of Glasgow.

AQUIFER.--Rome Formation of Cambrian age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 6 in., depth 695 ft, cased to 101 ft, open hole from 101 to 695 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel, prior to Oct. 1, 1995 continuous strip-chart recorder.

DATUM.--Elevation of land-surface datum is 745 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.

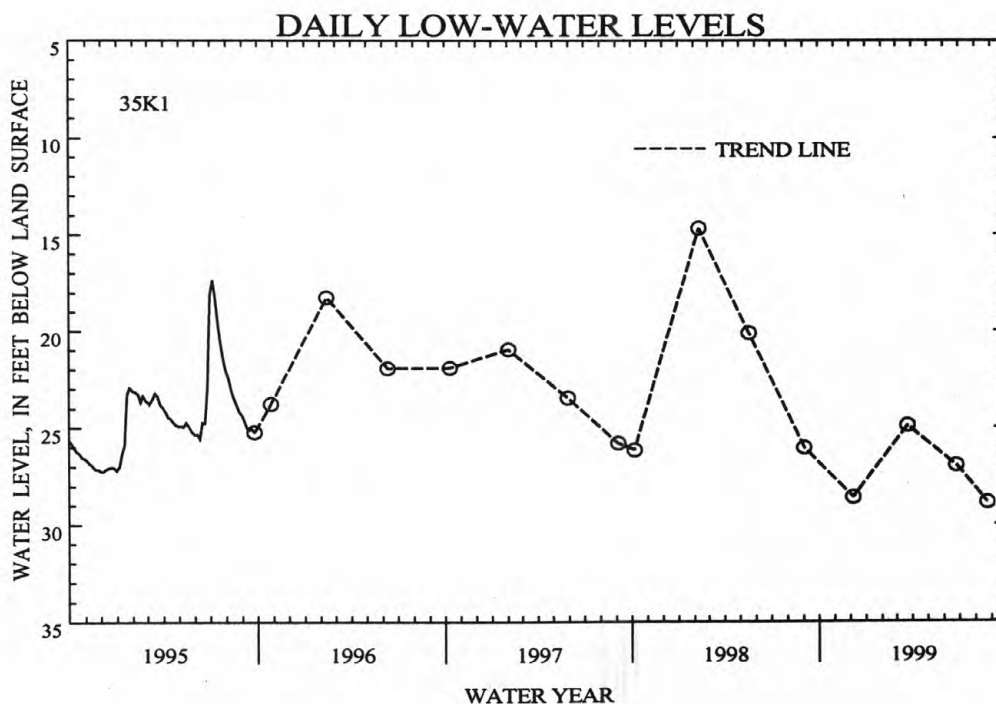
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--June 1972 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 14.27 ft below land-surface datum, Apr. 29, 1987; lowest recorded, 29.13 ft below land-surface datum, Dec. 13, 14, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 07	28.59	MAR 23	24.89	JUN 25	26.94	AUG 24	28.85
WATER YEAR 1999	HIGHEST	24.89	MAR 23, 1999				
	LOWEST	28.85	AUG 24, 1999				



GROUND-WATER LEVELS

ROCKINGHAM COUNTY

382150078424001. Local number, 41Q 1.

LOCATION.--Lat 38°21'50", long 78°42'40", Hydrologic Unit 02070005, at Virginia Department of Transportation garage, 1.3 mi southeast of McGaheysville. Owner: U.S. Geological Survey.

AQUIFER.--Conococheague Formation of Late Cambrian age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6.25 in., depth 310 ft, cased to 131 ft, open hole 131 to 310 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel. June 27, 1979 to Oct. 1, 1995, digital recorder--60-minute punch. Prior to June 27, 1979, continuous strip-chart recorder.

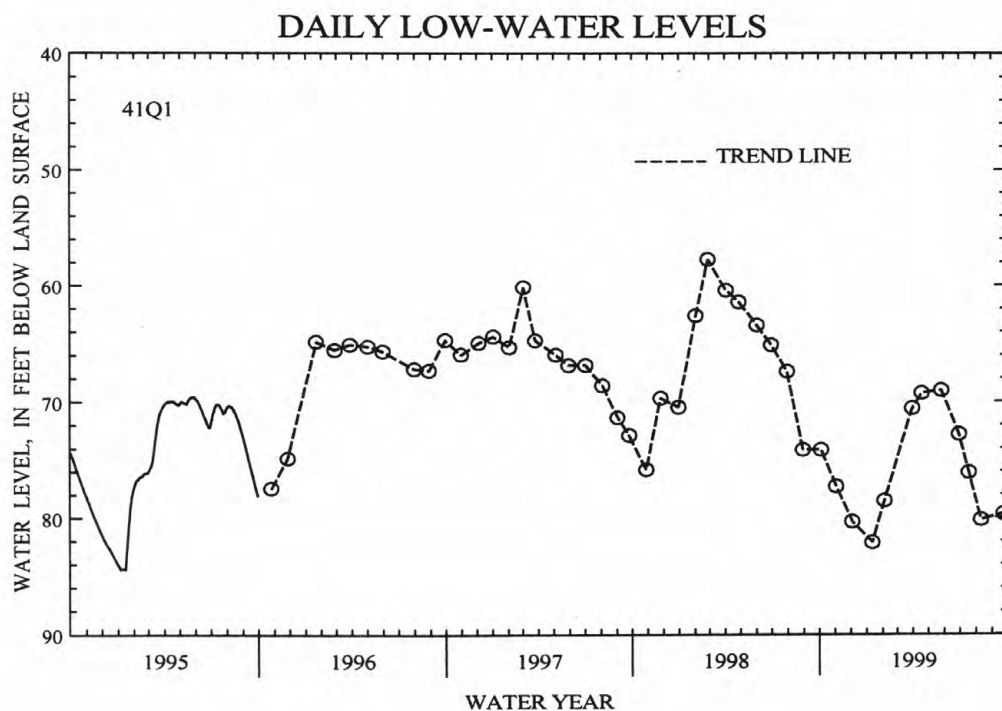
DATUM.--Elevation of land-surface datum is 1,105 ft above sea level, from topographic map. Measuring point: Top of casing 2.4 ft above land-surface datum. Prior to Feb. 27, 1996, top edge of recorder shelf, 3.5 ft above land-surface datum.

PERIOD OF RECORD.--August 1970 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 57.73 ft below land-surface datum, Feb. 27, 1998; lowest recorded, 88.08 ft below land-surface datum, Jan. 14, 1989.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 05	74.11	DEC 04	80.33	FEB 05	78.53	APR 19	69.25	JUN 30	72.79	AUG 11	80.17
NOV 03	77.29	JAN 12	82.12	MAR 31	70.56	MAY 27	69.02	JUL 19	76.11	SEP 24	79.66
WATER YEAR 1999		HIGHEST	69.02	MAY 27, 1999							
		LOWEST	82.12	JAN 12, 1999							



GROUND-WATER LEVELS

SOUTHAMPTON COUNTY

363410077150801. Local number, 52A 1.

LOCATION.--Lat 36°34'10", long 77°15'08", Hydrologic Unit 03010204, along Seaboard Coastline railroad, 0.15 mi northwest of intersection of State Highways 195 and 701 in Branchville. Owner: L. W. Grizzard.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled withdrawal water well, diameter 4 in., depth 217 ft, screened 204 to 217 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 44 ft above sea level, from topographic map. Measuring point: Top of casing, 0.8 ft above land-surface datum.

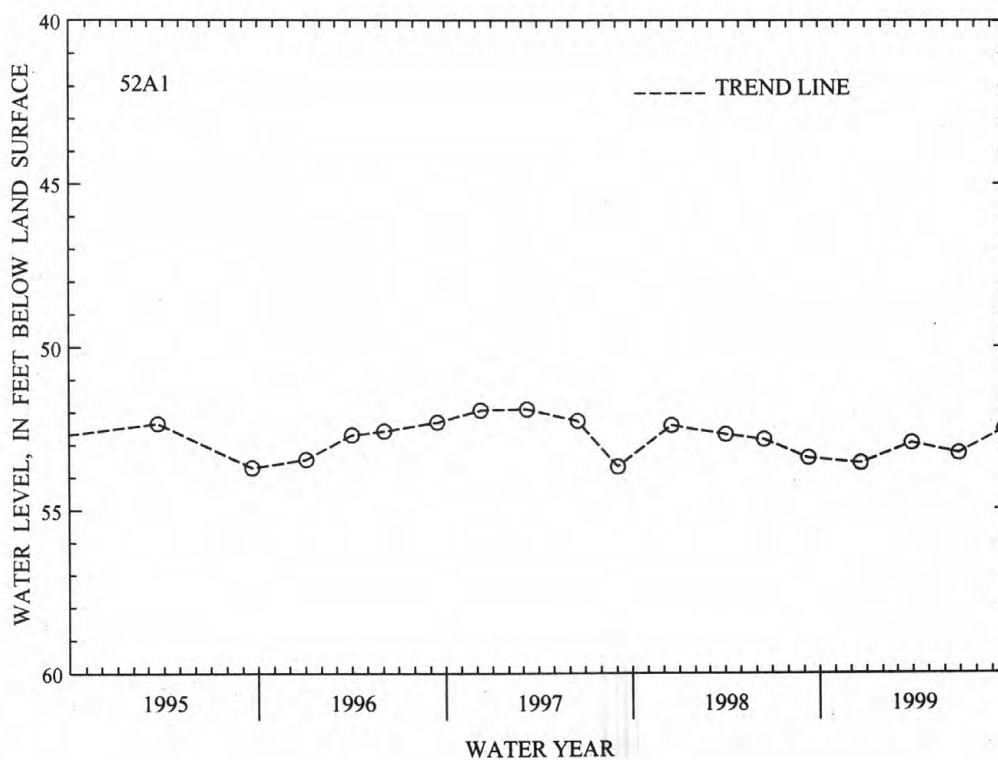
REMARKS.--Water level affected by regional drawdown.

PERIOD OF RECORD.--September 1970 to December 1975, January 1978 to current year. Unpublished records available prior to October 1985 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 32.85 ft below land-surface datum, Sept. 9, 1970; lowest measured, 53.70 ft below land-surface datum, Sept. 20, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 22	53.57	MAR 31	52.95	JUN 30	53.27	SEP 27	52.53
WATER YEAR 1999	HIGHEST	52.53	SEP 27, 1999				
	LOWEST	53.57	DEC 22, 1998				



GROUND-WATER LEVELS

SOUTHAMPTON COUNTY

363916077201001. Local number, 52B 8 SOW 178A.

LOCATION.--Lat 36°39'16", long 77°20'10", Hydrologic Unit 03010204, 0.25 mi northeast of State Highway 661, 0.6 mi south of the intersection of State Highways 652 and 661, and 4.5 mi southeast of Drewryville. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Newark Supergroup sandstone of Jurassic and Triassic age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 316 ft, screened 285 to 295 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 120 ft above sea level, from topographic map. Measuring point: Top of casing, 1.6 ft above land-surface datum.

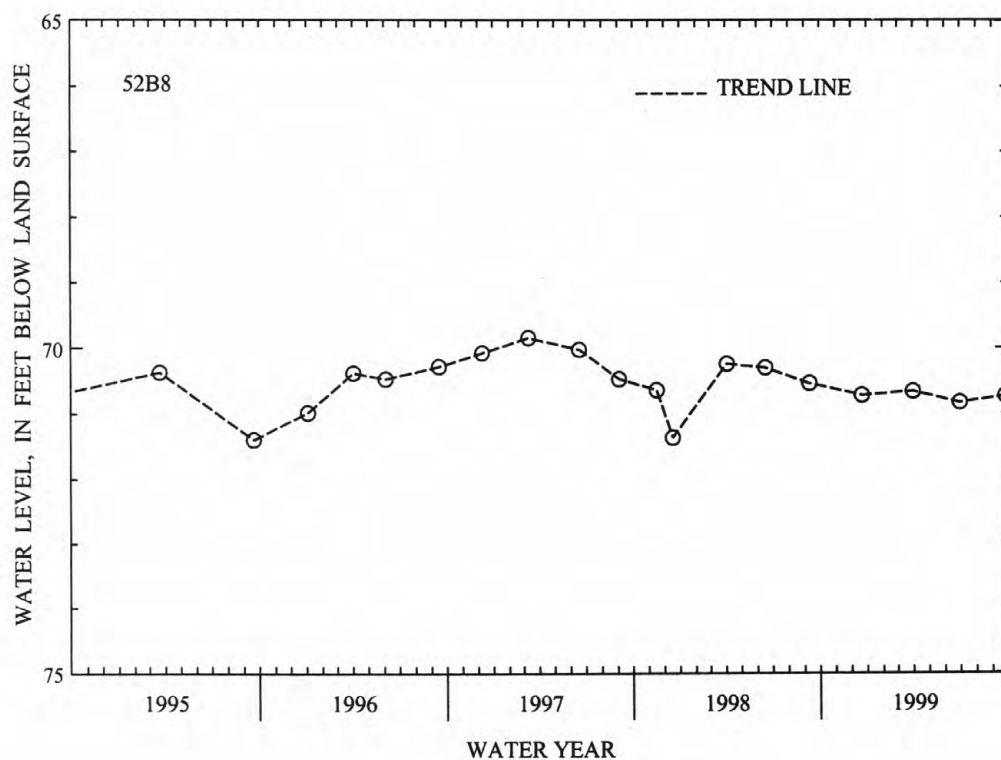
REMARKS.--Water level may be affected by regional drawdown. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

PERIOD OF RECORD.--March 1988 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 69.30 ft below land-surface datum, Mar. 15, 1990; lowest measured, 71.39 ft below land-surface datum, Sept. 20, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 22	70.72	MAR 31	70.66	JUN 30	70.83	SEP 27	70.73
WATER YEAR 1999		HIGHEST	70.66	MAR 31, 1999			
		LOWEST	70.83	JUN 30, 1999			



GROUND-WATER LEVELS

SOUTHAMPTON COUNTY

363916077201004. Local number, 52B 11 SOW 178D.

LOCATION.--Lat 36°39'16", long 77°20'10", Hydrologic Unit 03010204, 0.25 mi northeast of State Highway 661, 0.6 mi south of intersection of State Highways 652 and 661, and 4.5 mi southeast of Drewryville. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 190 ft, screened 160 to 170 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to November 1987, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 120 ft above sea level, from topographic map. Measuring point: Top of casing, 2.1 ft above land-surface datum.

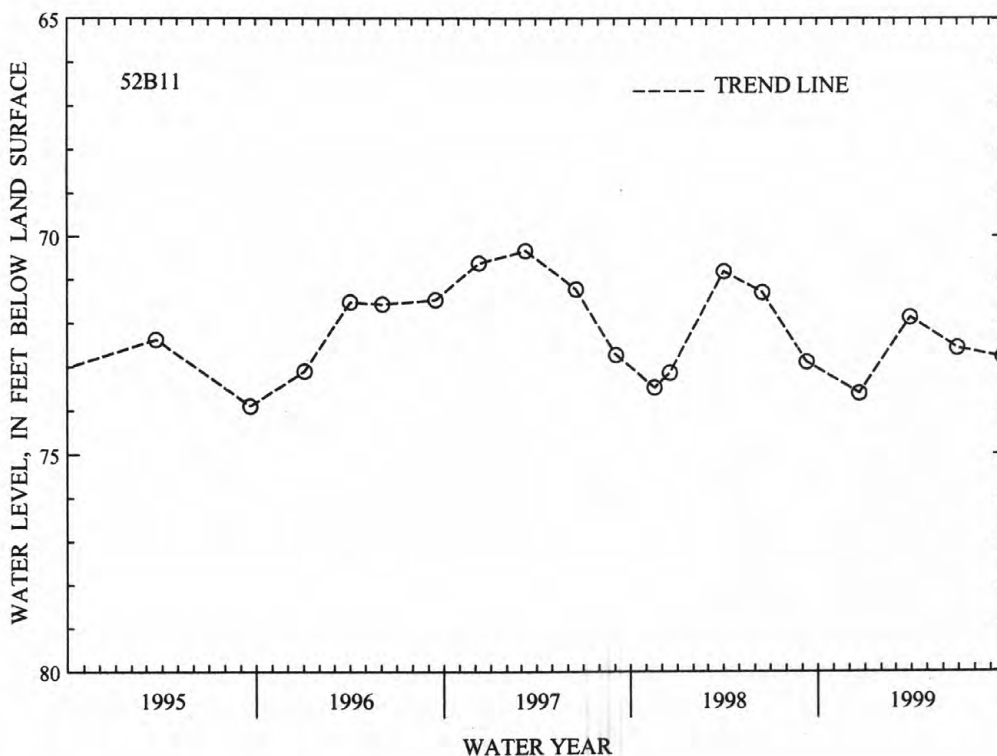
REMARKS.--Water level may be affected by regional drawdown.

PERIOD OF RECORD.--December 1985 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 69.81 ft below land-surface datum, Apr. 16, 1987; lowest recorded, 73.89 ft below land-surface datum, Sept. 20, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 22	73.60	MAR 31	71.86	JUN 30	72.56	SEP 27	72.77
WATER YEAR 1999		HIGHEST	71.86	MAR 31, 1999		LOWEST	73.60
			73.60	DEC 22, 1998			



GROUND-WATER LEVELS

SOUTHAMPTON COUNTY

363916077201005. Local number, 52B 12 SOW 178E.

LOCATION.--Lat 36°39'16", long 77°20'10", Hydrologic Unit 03010204, 0.25 mi northeast of State Highway 661, 0.6 mi south of intersection of State Highways 652 and 661, and 4.5 mi southeast of Drewryville. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 135 ft, screened 120 to 130 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to November 1987, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 120 ft above sea level, from topographic map. Measuring point: Top of casing, 2.2 ft above land-surface datum.

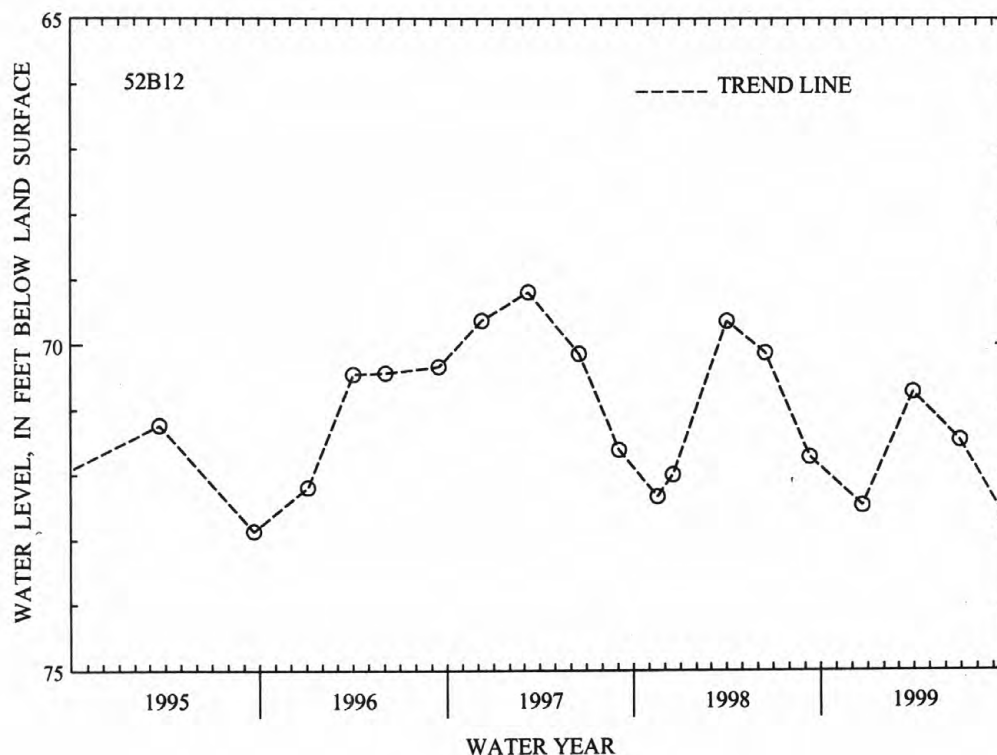
REMARKS.--Water level may be affected by regional drawdown.

PERIOD OF RECORD.--December 1985 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 68.75 ft below land-surface datum, Apr. 16, 1987; lowest recorded, 72.86 ft below land-surface datum, Sept. 20, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 22	72.47	MAR 31	70.72	JUN 30	71.46	SEP 27	72.70
WATER YEAR 1999	HIGHEST	70.72	MAR 31, 1999				
	LOWEST	72.70	SEP 27, 1999				



GROUND-WATER LEVELS

SOUTHAMPTON COUNTY

363916077201006. Local number, 52B 13 SOW 178F.

LOCATION.--Lat 36°39'16", long 77°20'10", Hydrologic Unit 03010204, 0.25 mi northeast of State Highway 661, 0.6 mi south of intersection of State Highways 652 and 661, and 4.5 mi southeast of Drewryville. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 65 ft, screened 40 to 50 ft.

INSTRUMENTATION.--Occasional measurements with chalked tape by USGS personnel. Prior to November 1987, digital recorder--60-minute punch.

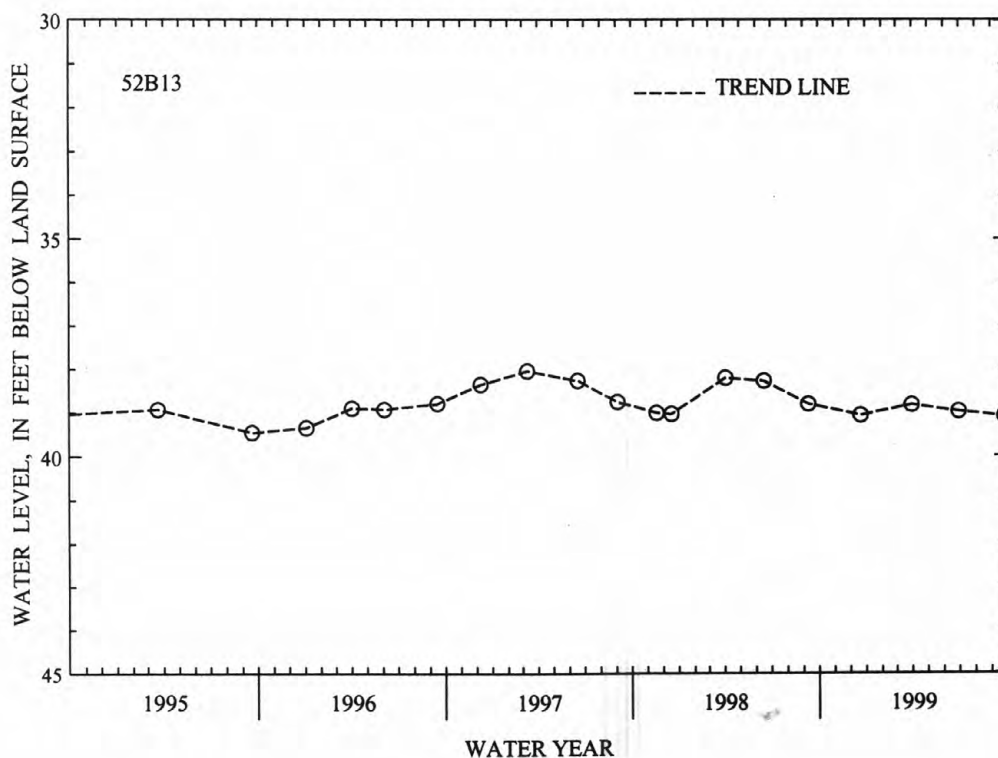
DATUM.--Elevation of land-surface datum is 120 ft above sea level, from topographic map. Measuring point: Top of casing, 2.9 ft above land-surface datum.

PERIOD OF RECORD.--December 1985 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 37.90 ft below land-surface datum, Apr. 29, 1987; lowest recorded, 43.77 ft below land-surface datum, Oct. 6-9, 1987.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 22	39.06	MAR 31	38.82	JUN 30	38.97	SEP 27	39.08
WATER YEAR 1999		HIGHEST	38.82	MAR 31, 1999			
		LOWEST	39.08	SEP 27, 1999			



GROUND-WATER LEVELS

SOUTHAMPTON COUNTY

364242077121501. Local number, 53B 6.

LOCATION.--Lat 36°42'42", long 77°12'15", Hydrologic Unit 03010201, at Virginia Department of Transportation - Capron Area Headquarters, 50 ft east of State Highway 654 and 2000 ft north of U.S. Highway 58. Owner: U.S. Geological Survey.

AQUIFER.--Brighseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 2 in., depth 115.65 ft, screened 110.65 ft to 115.65 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to October 1998, monthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 95 ft above sea level. Measuring point: Top of casing, 0.88 ft above land-surface datum.

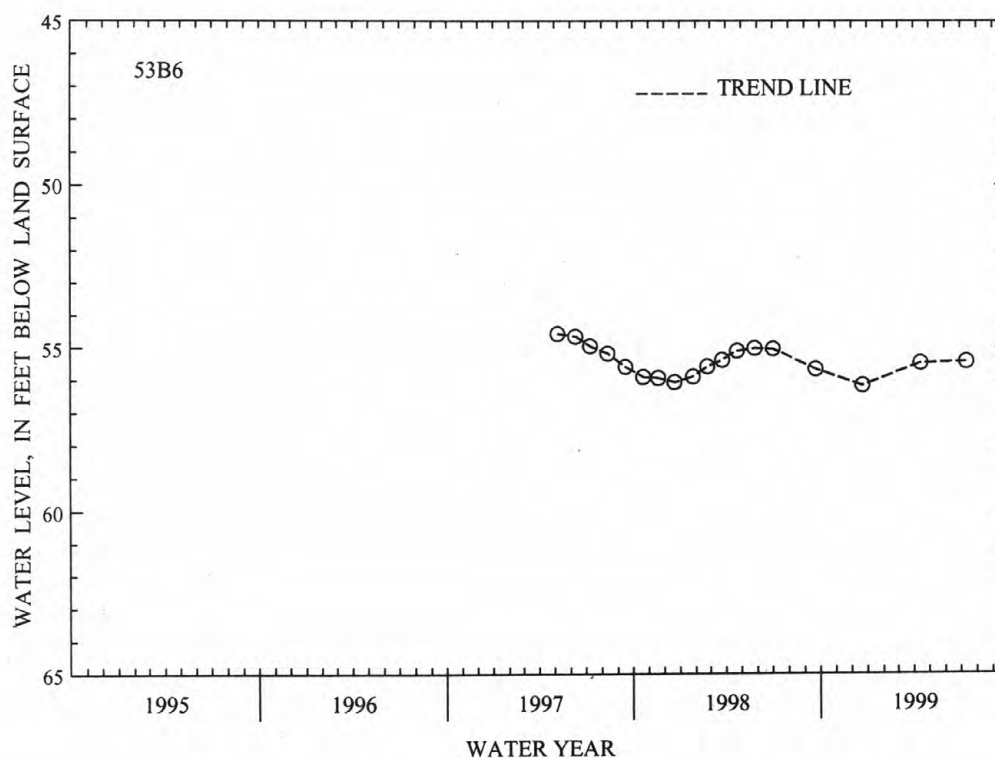
REMARKS.--Well drilled as part of Fall Zone ground-water study.

ERIOD OF RECORD.--May 1997 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 54.55 ft below land-surface datum, May 7, 1997; lowest measured, 56.14 ft below land-surface datum, Dec. 23, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 23	56.14	APR 15	55.45	JUL 13	55.41
WATER YEAR 1999					
HIGHEST	55.41	JUL 13, 1999			
LOWEST	56.14	DEC 23, 1998			



GROUND-WATER LEVELS

SOUTHAMPTON COUNTY

364242077121502. Local number, 53B 7.

LOCATION.--Lat 36°42'42", long 77°12'15", Hydrologic Unit 03010201, at Virginia Department of Transportation - Capron Area Headquarters, 50 ft east of State Highway 654 and 2000 ft north of U.S. Highway 58. Owner: U.S. Geological Survey.

AQUIFER.--Brighseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 2 in., depth 80.77 ft, screened 75.77 ft to 80.77 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to October 1998, monthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 95 ft above sea level. Measuring point: Top of casing, 0.82 ft above land-surface datum.

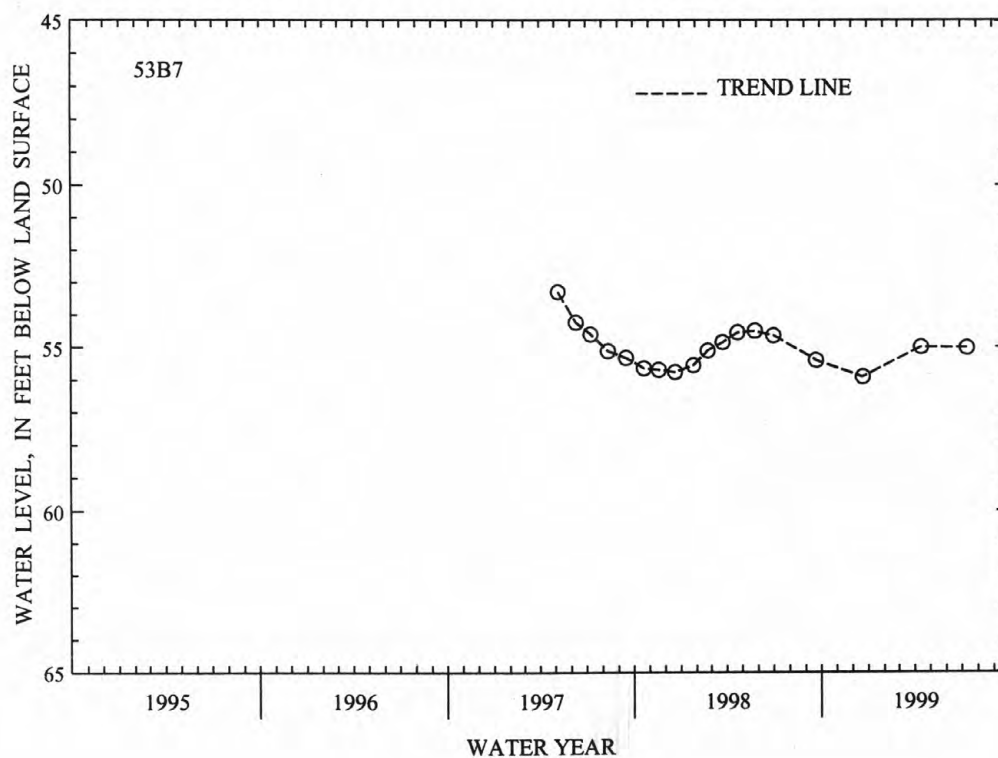
REMARKS.--Well drilled as part of Fall Zone ground-water study.

PERIOD OF RECORD.--May 1997 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 53.29 ft below land-surface datum, May 7, 1997; lowest measured, 55.91 ft below land-surface datum, Dec 23, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 23	55.91	APR 15	54.99	JUL 13	55.01
WATER YEAR 1999	HIGHEST	54.99	APR 15, 1999		
	LOWEST	55.91	DEC 23, 1998		



GROUND-WATER LEVELS

SOUTHAMPTON COUNTY

363722077014601. Local number, 54A 1.

LOCATION.--Lat 36°37'22", long 77°01'46", Hydrologic Unit 03010201, 100 ft west of State Highway 681, 0.5 mi north of intersection of State Highways 672 and 681, and 2.4 mi north of Sunbeam. Owner: William Britt.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled withdrawal water well, diameter 4 in., depth 254 ft, screened 244 to 254 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 35 ft above sea level, from topographic map. Measuring point: Top of casing, 1.03 ft above land-surface datum.

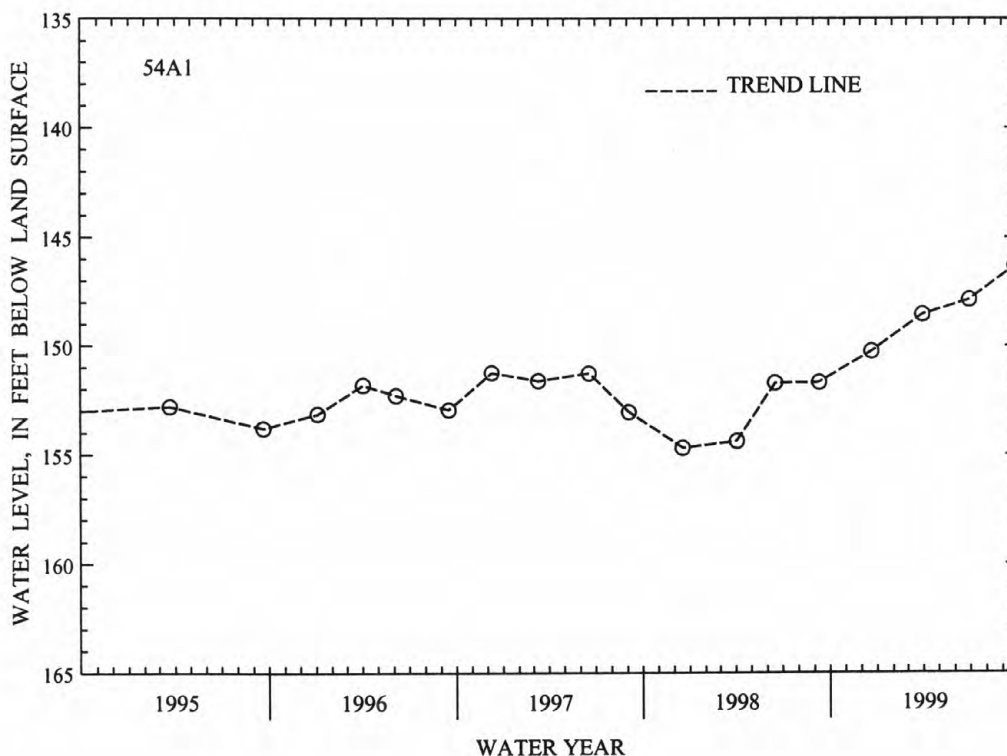
REMARKS.--Water level affected by regional drawdown.

PERIOD OF RECORD.--August 1970 to December 1975, January 1978 to current year. Unpublished records available prior to October 1985 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 113.40 ft below land-surface datum, Aug. 17, 1970; lowest measured, 154.68 ft below land-surface datum, Dec. 18, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 22	150.24	MAR 31	148.53	JUN 30	147.86	SEP 27	146.29
WATER YEAR 1999		HIGHEST	146.29	SEP 27, 1999			
		LOWEST	150.24	DEC 22, 1998			



GROUND-WATER LEVELS

SOUTHAMPTON COUNTY

363632076580101. Local number, 55A 3 SOW 086.

LOCATION.--Lat 36°36'32", long 76°58'01", Hydrologic Unit 03010201, 0.1 mi southeast of intersection of State Highways 687 and 689, 4.0 mi southwest of Franklin. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Lower Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in., depth 745 ft, screened 714 to 724 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 16, 1992, to July 19, 1995, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Mar. 2, 1989, to Oct. 15, 1992, occasional measurement with chalked tape by USGS. Prior to Oct. 16, 1989, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 18 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum prior to Jan. 11, 1988; 1.3 ft thereafter.

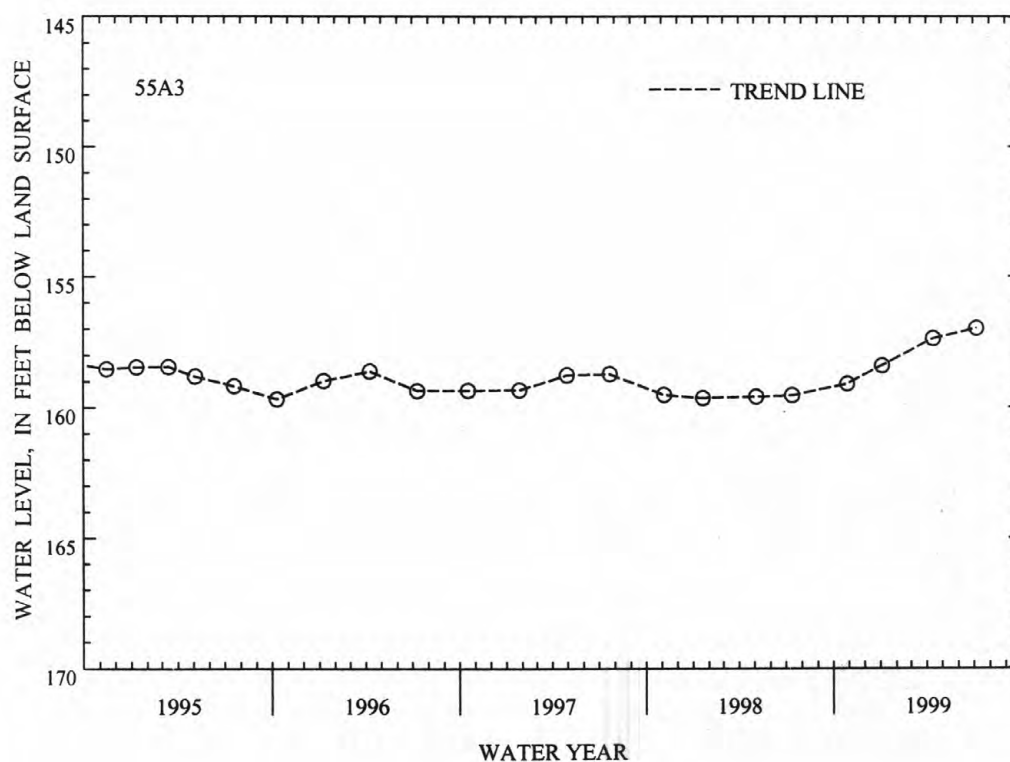
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division prior to Mar. 1, 1989; U.S. Geological Survey Mar. 2, 1989, to Oct. 7, 1992; Virginia Department of Environmental Quality - Water Division thereafter. Water level affected by regional drawdown.

PERIOD OF RECORD.--March 1977, October 1978 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 125.00 ft below land-surface datum, Mar. 18, 1977; lowest measured, 159.67 ft below land-surface datum, Oct 11, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	159.09	JAN 05	158.40	APR 14	157.37	JUL 07	156.98
WATER YEAR 1999	HIGHEST	156.98	JUL 07, 1999				
	LOWEST	159.09	OCT 29, 1998				



GROUND-WATER LEVELS

SOUTHAMPTON COUNTY

365120076585101. Local number, 55C 10.

LOCATION.--Lat 36°51'20", long 76°58'51", Hydrologic Unit 03010202, 100 ft west of State Highway 616, 0.3 mi south of Berlin. Owner: R. L. Harrup.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled withdrawal water well, diameter 4 in., depth 326 ft, screened 316 to 326 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel.

DATUM.--Elevation of land-surface datum is 65 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum.

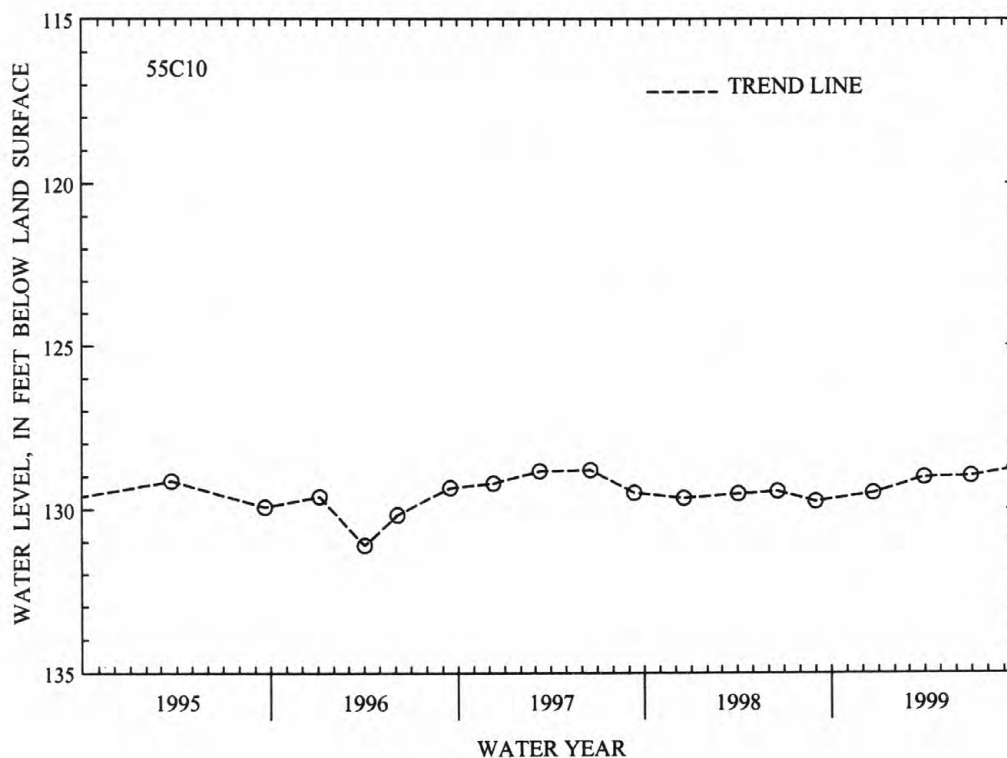
REMARKS.--Water level affected by regional drawdown.

PERIOD OF RECORD.--August 1970 to December 1975, January 1978 to current year. Unpublished records available prior to October 1985 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 94.62 ft below land-surface datum, Aug. 21, 1970; lowest measured, 132.10 ft below land-surface datum, Apr. 2, 1996.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 22	129.50	MAR 31	129.02	JUN 30	128.98	SEP 23	128.75
WATER YEAR 1999	HIGHEST	128.75	SEP 23, 1999				
	LOWEST	129.50	DEC 22, 1998				



GROUND-WATER LEVELS

CITY OF SUFFOLK

363345076470201. Local number, 56A 10 SOW 088A.

LOCATION.--Lat 36°33'45", long 76°47'02", Hydrologic Unit 03010203, 0.1 mi north of intersection of State Highways 668 and 669, 1.9 mi west of Somerton. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Lower Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 1,060 ft, screened 1,050 to 1,060 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 16, 1992, to July 19, 1995, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Mar. 2, 1989, to Oct. 15, 1992, occasional measurement with chalked tape by USGS. Prior to Oct. 16, 1989, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 45 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum prior to Jan. 12, 1988; 1.3 ft thereafter.

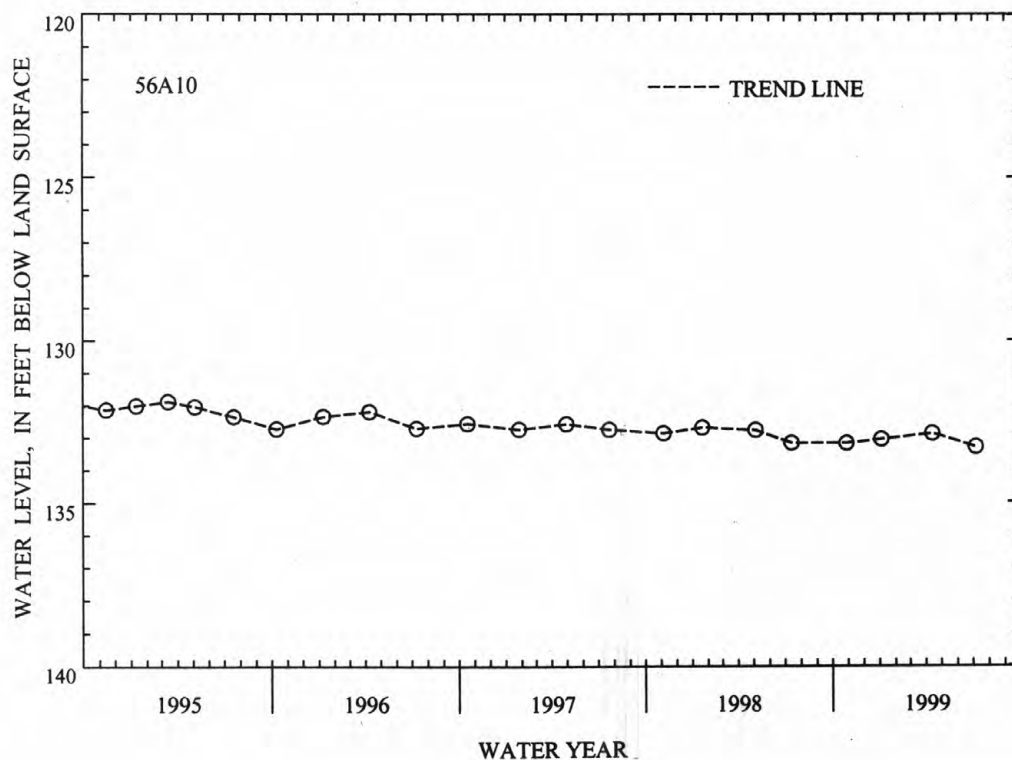
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division prior to Mar. 1, 1989; U.S. Geological Survey Mar. 2, 1989, to Oct. 15, 1992; Virginia Department of Environmental Quality - Water Division thereafter. Water level affected by regional drawdown.

PERIOD OF RECORD.--June 1977 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 104.70 ft below land-surface datum, June 30, 1980; lowest measured, 133.30 ft below land-surface datum, July 7, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	133.18	JAN 05	133.06	APR 14	132.88	JUL 07	133.30
WATER YEAR 1999	HIGHEST	132.88	APR 14, 1999				
	LOWEST	133.30	JUL 07, 1999				



GROUND-WATER LEVELS

CITY OF SUFFOLK

363653076455401. Local number, 56A 11 SOW 089.

LOCATION.--Lat 36°36'53", long 76°45'54", Hydrologic Unit 03010203, off State Highway 616, 1.1 mi east of Holy Neck Church, and 3.4 mi north of Somerton. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 861 ft, screened 830 to 840 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 16, 1992, to July 19, 1995, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Mar. 2, 1989, to Oct. 15, 1992, occasional measurement with chalked tape by USGS. Prior to Oct. 16, 1989, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 79 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum prior to Nov. 18, 1987; 0.6 ft Nov. 18, 1987, to Jan. 12, 1988; 1.3 ft thereafter.

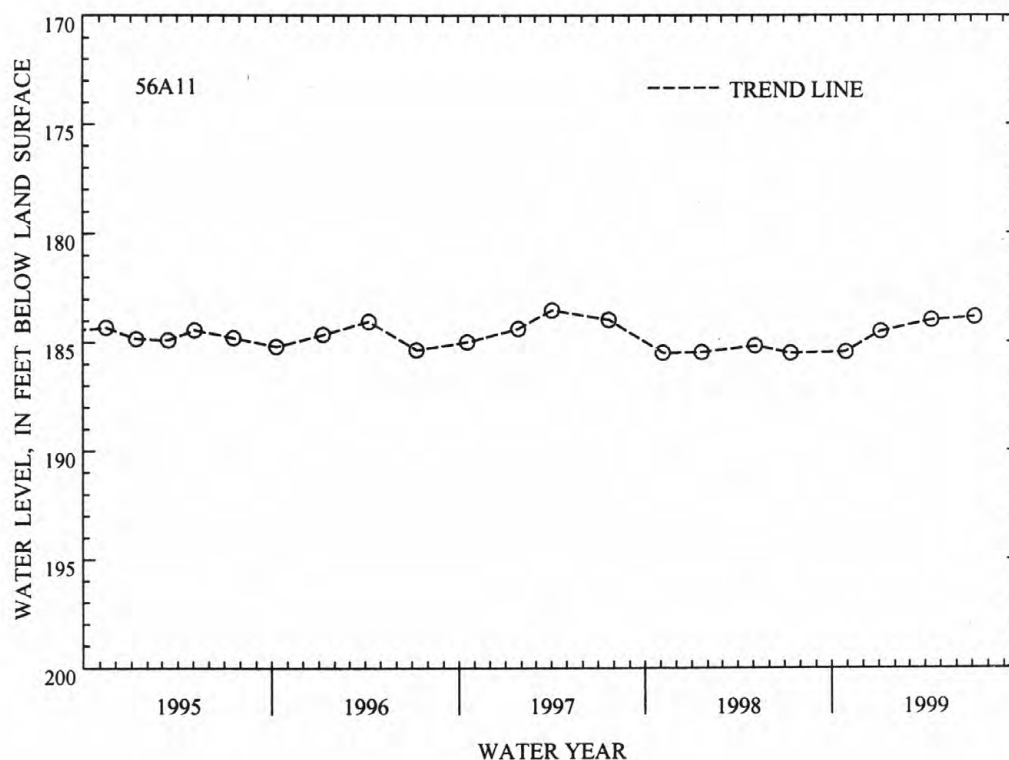
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division prior to Mar. 1, 1989; U.S. Geological Survey Mar. 2, 1989, to Oct. 15, 1992; Virginia Department of Environmental Quality - Water Division thereafter. Water level affected by regional drawdown.

PERIOD OF RECORD.--August 1977 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 154.00 ft below land-surface datum, Aug. 9, 1977; lowest measured, 185.50 ft below land-surface datum, July 14, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	185.44	JAN 05	184.49	APR 14	183.98	JUL 07	183.84
WATER YEAR 1999	HIGHEST	183.84	JUL 07, 1999				
	LOWEST	185.44	OCT 29, 1998				



GROUND-WATER LEVELS

CITY OF SUFFOLK

363345076470202. Local number, 56A 12 SOW 088B.

LOCATION.--Lat 36°33'45", long 76°47'02", Hydrologic Unit 03010203, 0.1 mi north of intersection of State Highways 668 and 669, 1.9 mi west of Somerton. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 580 ft, screened 570 to 580 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 8, 1992, to July 19, 1995, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Mar. 2, 1989, to Oct. 7, 1992, occasional measurement with chalked tape by USGS. Prior to Oct. 8, 1989, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 45 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum prior to Jan. 12, 1988; 1.3 ft thereafter.

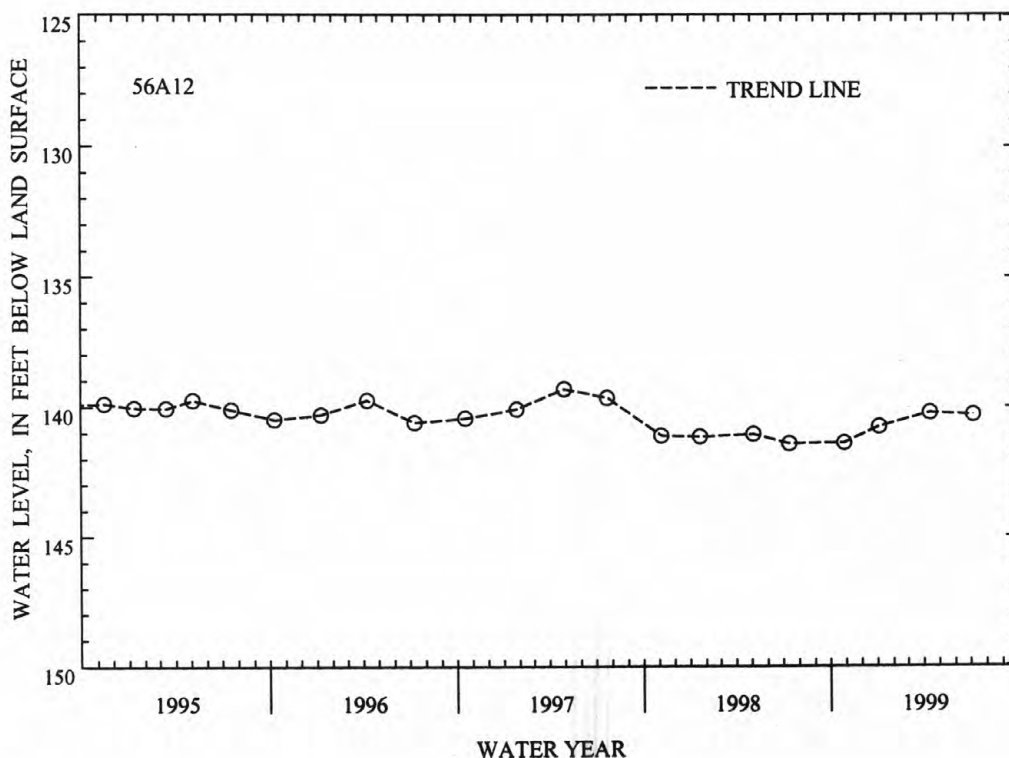
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division prior to Mar. 1, 1989; U.S. Geological Survey Mar. 2, 1989, to Oct. 7, 1992; Virginia Department of Environmental Quality - Water Division thereafter. Water level affected by regional drawdown.

PERIOD OF RECORD.--June 1977 to November 1982, June 1985 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 103.00 ft below land-surface datum, June 30, 1977; lowest measured, 141.42 ft below land-surface datum, July 14, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	141.39	JAN 05	140.76	APR 14	140.22	JUL 07	140.30
WATER YEAR 1999	HIGHEST	140.22	APR 14, 1999				
	LOWEST	141.39	OCT 29, 1998				



GROUND-WATER LEVELS

CITY OF SUFFOLK

363625076522602. Local number, 56A 13 SOW 076B.

LOCATION.--Lat 36°36'25", long 76°52'26", Hydrologic Unit 03010203, 700 ft west of State Highway 615, 0.5 mi southwest of Olive Branch Church, and 8.1 mi south of Holland. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Lower Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 807 ft, screened 797 to 802 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 16, 1992, to July 19, 1995, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Mar. 2, 1989, to Oct. 15, 1992, occasional measurement with chalked tape by USGS. Prior to Oct. 16, 1989, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 75 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum prior to Jan. 12, 1988; 0.8 ft thereafter.

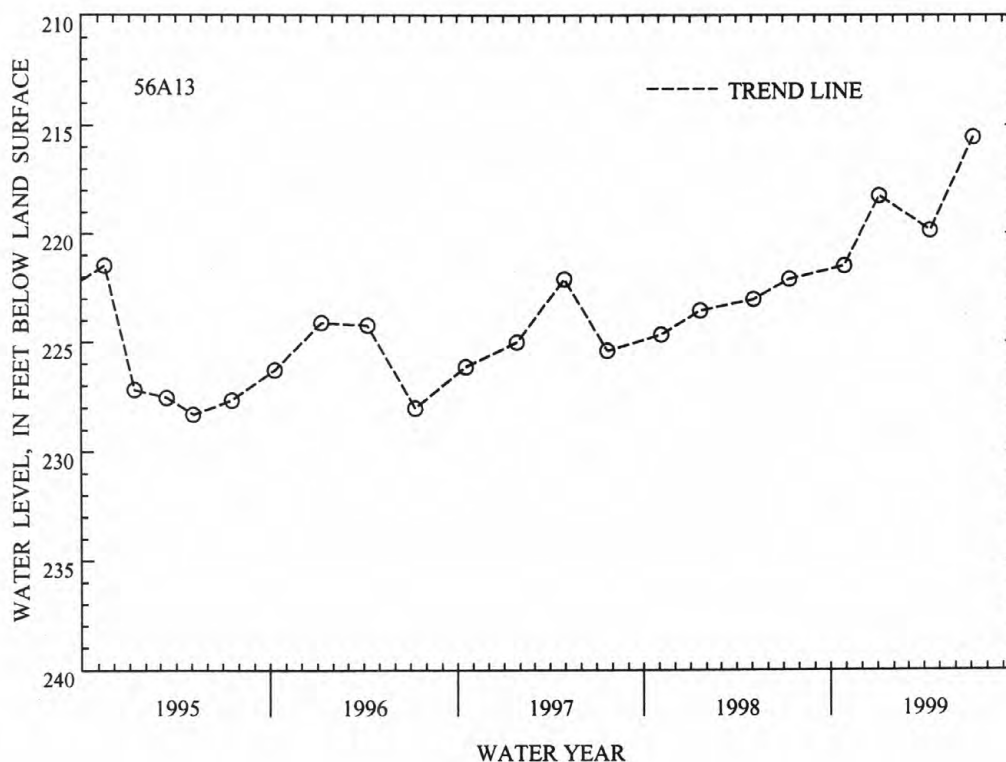
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division prior to Mar. 1, 1989; U.S. Geological Survey Mar. 2, 1989, to Oct. 15, 1992; Virginia Department of Environmental Quality - Water Division thereafter. Water level affected by local pumpage and regional drawdown.

PERIOD OF RECORD.--May 1979 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 204.34 ft below land-surface datum, Oct. 26, 1982; lowest measured, 228.29 ft below land-surface datum, May 5, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	221.49	JAN 05	218.25	APR 14	219.85	JUL 07	215.55
WATER YEAR 1999	HIGHEST	215.55	JUL 07, 1999				
	LOWEST	221.49	OCT 29, 1998				



GROUND-WATER LEVELS

CITY OF SUFFOLK

363625076522603. Local number, 56A 14 SOW 076C.

LOCATION.--Lat 36°36'25", long 76°52'26", Hydrologic Unit 03010203, 700 ft west of State Highway 615, 0.5 mi southwest of Olive Branch Church, and 8.1 mi south of Holland. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 735 ft, screened 730 to 735 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 16, 1992, to July 19, 1995, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Mar. 2, 1989, to Oct. 15, 1992, occasional measurement with chalked tape by USGS. Prior to Oct. 16, 1989, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 75 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum prior to Jan. 12, 1988; 1.2 ft thereafter.

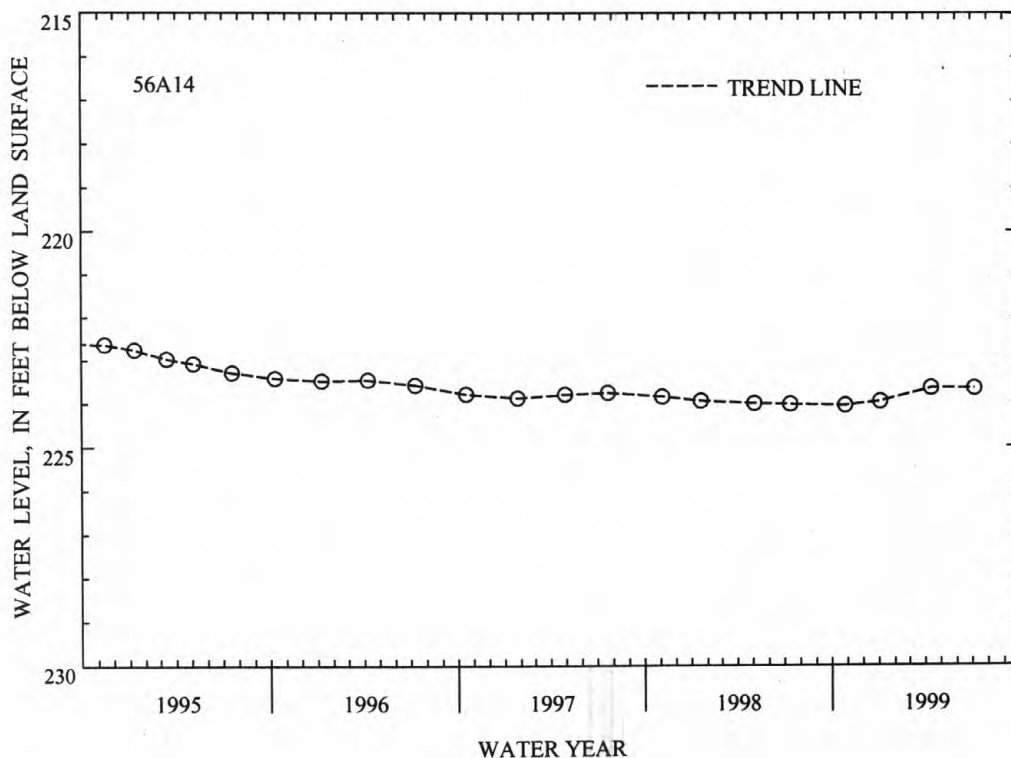
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division prior to Mar. 1, 1989; U.S. Geological Survey Mar. 2, 1989, to Oct. 15, 1992; Virginia Department of Environmental Quality - Water Division thereafter. Water level affected by regional drawdown.

PERIOD OF RECORD.--March 1979 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 205.62 ft below land-surface datum, Mar. 7, 1979; lowest measured, 224.05 ft below land-surface datum, Oct. 29, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	224.05	JAN 05	223.96	APR 14	223.65	JUL 07	223.66
WATER YEAR 1999	HIGHEST	223.65	APR 14, 1999				
	LOWEST	224.05	OCT 29, 1998				



GROUND-WATER LEVELS

CITY OF SUFFOLK

363834076382301. Local number, 57B 8.

LOCATION.--Lat 36°38'27", long 76°38'05", Hydrologic Unit 03010205, 0.3 mi southwest of State Highway 664, 0.8 mi southeast of U.S. Highway 13, and 1.1 mi south of Nurneysville. Owner: Soren F. Andresen.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled flowing water well, diameter 2 in., depth 65 ft, screened 50 to 65 ft.

INSTRUMENTATION.--Occasional measurement with manometer by USGS personnel. Dec. 1, 1988, to June 1, 1990, quarterly measurement with a manometer. Prior to Dec. 1, 1988, bimonthly measurement with a manometer.

DATUM.--Elevation of land-surface datum is 45 ft above sea level, from topographic map. Measuring point: At land-surface datum.

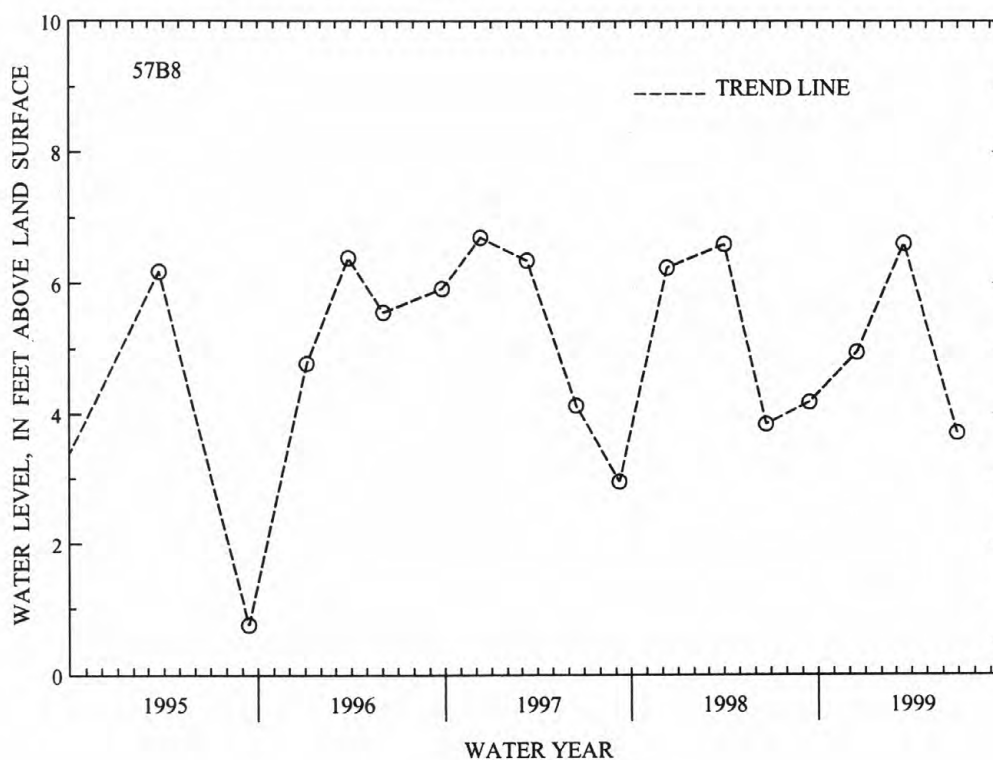
REMARKS.--Capped flowing well; readings are above land-surface datum. Occasional small withdrawals that supply nearby cabin can effect water levels.

PERIOD OF RECORD.--March 1975, November 1977 to current year. Unpublished records available March 1975 in files of the Geological Survey.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.70 ft above land-surface datum, Dec. 11, 1996; lowest measured, at land-surface datum, Sept. 26, 1980.

WATER LEVEL, IN FEET ABOVE LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 16	4.95	MAR 18	6.61	JUN 29	3.70
WATER YEAR 1999	HIGHEST LOWEST	6.61 3.70	MAR 18, 1999 JUN 29, 1999		



GROUND-WATER LEVELS

CITY OF SUFFOLK

364703076383701. Local number, 57C 21 SOW 099A.

LOCATION.--Lat 36°47'03", long 76°38'37", Hydrologic Unit 02080208, 700 ft south of U.S. Highway 460, 0.5 mi west of Providence Church, and 1.0 mi west of Kings Fork. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Aquia aquifer of Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 248 ft, screened 238 to 248 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 7, 1985, to July 19, 1995, bimonthly measurement with chalked tape. Prior to Oct. 7, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 72 ft above sea level, from topographic map. Measuring point: Top of casing, 1.5 ft above land-surface datum prior to Jan. 12, 1988; 1.1 ft thereafter.

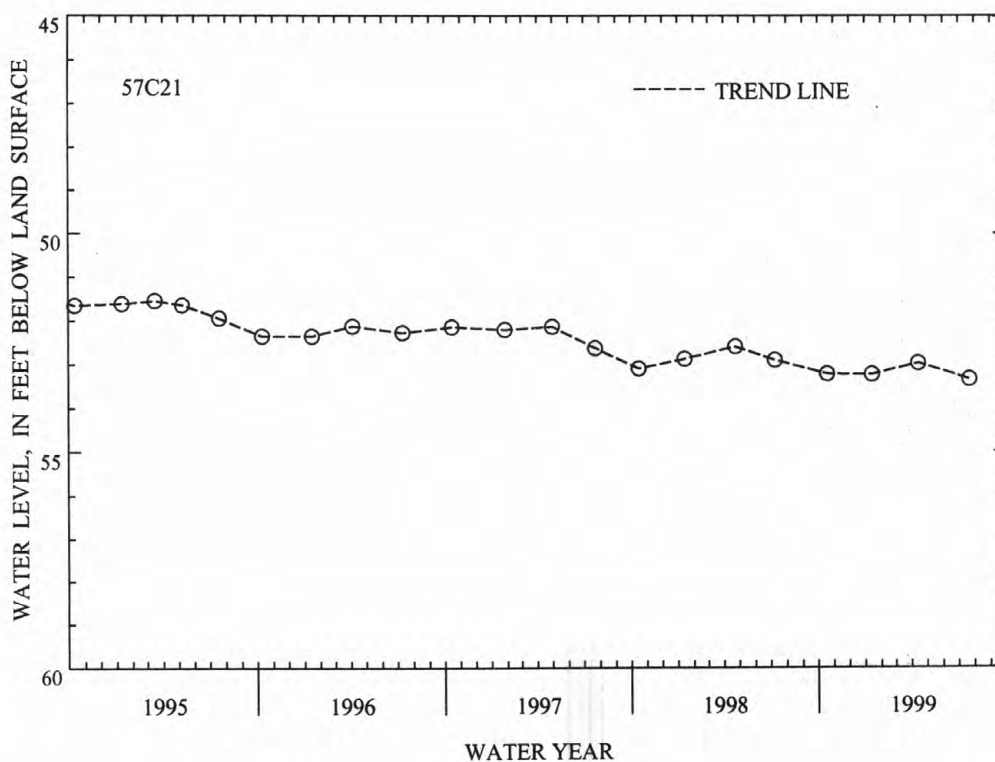
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

PERIOD OF RECORD.--September 1983 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 46.32 ft below land-surface datum, Apr. 19, 1984; lowest measured, 53.34 ft below land-surface datum, July 22, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	53.22	JAN 14	53.23	APR 14	52.97	JUL 22	53.34
WATER YEAR 1999	HIGHEST	52.97	APR 14, 1999				
	LOWEST	53.34	JUL 22, 1999				



GROUND-WATER LEVELS

CITY OF SUFFOLK

364703076383702. Local number, 57C 22 SOW 099B.

LOCATION.--Lat 36°47'03", long 76°38'37", Hydrologic Unit 02080208, 700 ft south of U.S. Highway 460, 0.5 mi west of Providence Church, and 1.0 mi west of Kings Fork. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 694 ft, screened 684 to 694 ft.

INSTRUMENTATION.--Continuous strip-chart recorder. Prior to Aug. 5, 1981, occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 72 ft above sea level, from topographic map. Measuring point: Top of recorder shelf, 2.0 ft above land-surface datum prior to July 14, 1987; 1.7 ft thereafter.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage and regional drawdown.

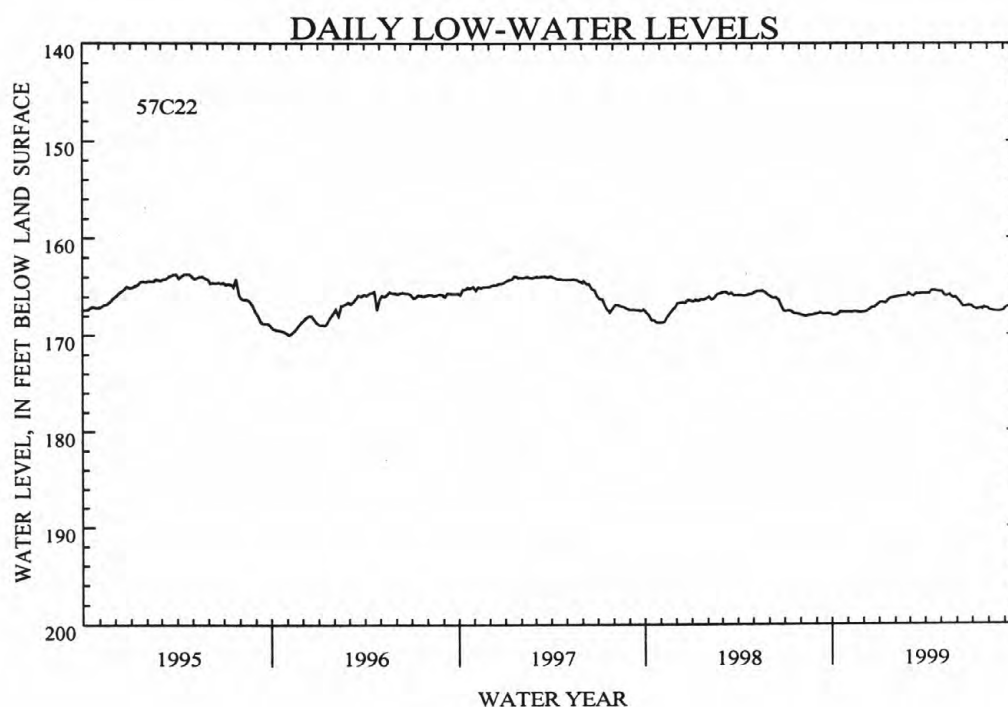
PERIOD OF RECORD.--February 1980 to current year. Unpublished records available prior to August 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 128.24 ft below land-surface datum, Feb. 18, 1980; lowest recorded, 188.19 ft below land-surface datum, Dec. 27, 28, 1993.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	167.95	167.62	167.60	166.62	166.10	165.90	165.73	165.52	166.35	167.22	167.41	167.20
10	167.92	167.63	167.52	166.62	166.03	166.00	165.70	165.92	166.72	167.34	167.50	167.06
15	167.82	167.59	167.32	166.68	165.98	165.70	165.43	165.93	167.05	167.27	167.56	167.12
20	167.58	167.58	167.13	166.40	165.95	165.74	165.38	165.83	167.03	167.21	167.55	166.80
25	167.60	167.64	167.09	166.18	165.95	165.70	165.47	166.16	166.95	167.12	167.55	166.61
EOM	167.63	167.62	166.77	166.12	165.70	165.72	165.53	166.13	166.99	167.24	167.50	166.76

WATER YEAR 1999 HIGHEST INSTANTANEOUS 165.35 APR 16, 1999
 LOWEST INSTANTANEOUS 168.05 OCT 02, 03, 04, 1998



GROUND-WATER LEVELS

CITY OF SUFFOLK

364703076383704. Local number, 57C 24 SOW 099D.

LOCATION.--Lat 36°47'03", long 76°38'37", Hydrologic Unit 02080208, 700 ft south of U.S. Highway 460, 0.5 mi west of Providence Church, and 1.0 mi west of Kings Fork. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 25 ft, screened 20 to 25 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 7, 1985, to July 19, 1995, bimonthly measurement with chalked tape. Prior to Oct. 7, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 72 ft above sea level, from topographic map. Measuring point: Top of casing, 0.5 ft above land-surface datum prior to Mar. 25, 1987; 2.0 ft Mar. 25, 1987, to Jan. 12, 1988; 1.3 ft Jan. 13, 1988, to June 24, 1990; 0.3 ft June 25 to Aug. 15, 1990; 1.8 ft thereafter.

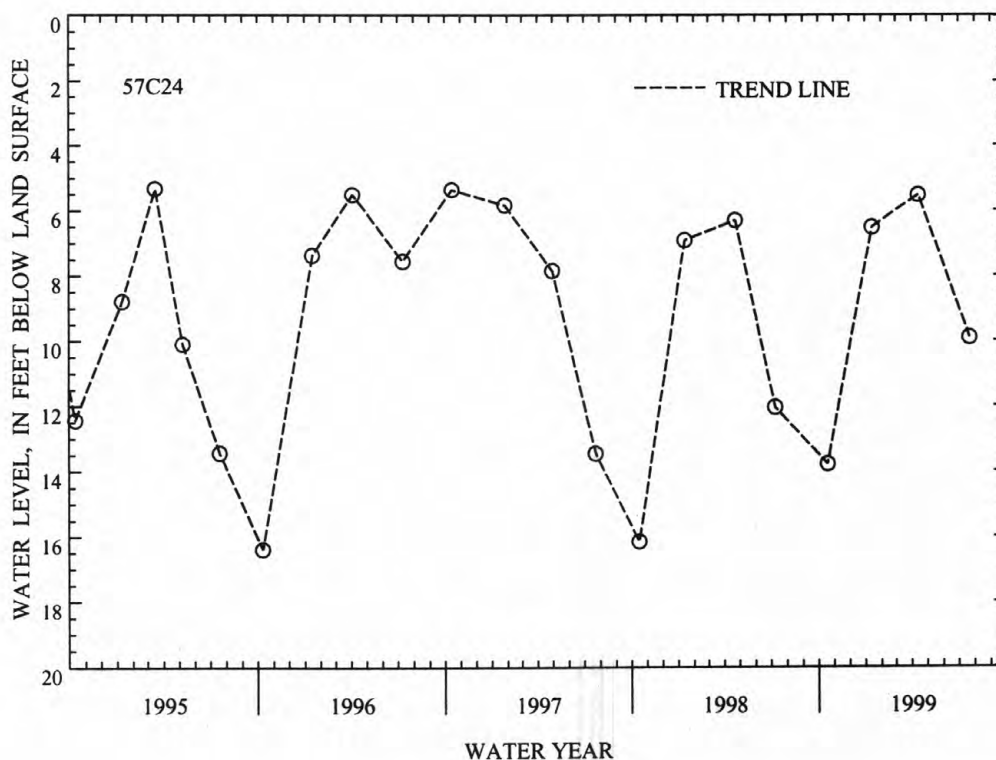
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--September 1983 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.90 ft below land-surface datum, Mar. 14, 1989; lowest measured, 16.38 ft below land-surface datum, Oct. 15, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	13.73	JAN 14	6.52	APR 14	5.52	JUL 22	9.90
WATER YEAR 1999	HIGHEST	5.52	APR 14, 1999				
	LOWEST	13.73	OCT 19, 1998				



GROUND-WATER LEVELS

CITY OF SUFFOLK

363303076330201. Local number, 58A 75 SOW 170.

LOCATION.--Lat 36°33'03", long 76°33'02", Hydrologic Unit 03010205, 100 ft north of North Carolina State line, 0.4 mi east of Desert Road, and 5.0 mi southeast of Cypress Chapel. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Virginia Beach aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 535 ft, screened 525 to 535 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 15, 1992, to July 19, 1995, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Mar. 2, 1989, to Oct. 14, 1992, occasional measurement with chalked tape by USGS. Prior to Oct. 15, 1989, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 40 ft above mean sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division prior to Mar. 1, 1989; U.S. Geological Survey Mar. 2, 1989, to Oct. 14, 1992; Virginia Department of Environmental Quality - Water Division thereafter. Water level affected by regional drawdown.

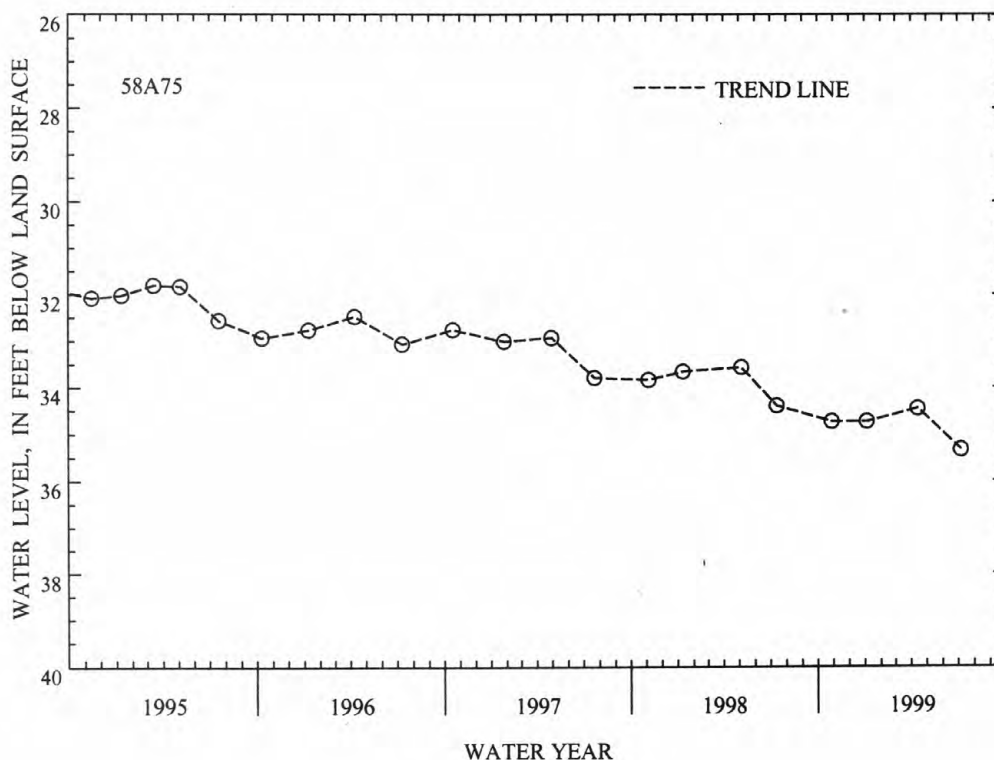
PERIOD OF RECORD.--July 1985 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.52 ft below land-surface datum, July 11, 1985; lowest measured, 35.33 ft below land-surface datum, July 7, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	34.73	JAN 05	34.73	APR 14	34.45	JUL 07	35.33

WATER YEAR 1999	HIGHEST	34.45	APR 14, 1999
	LOWEST	35.33	JUL 07, 1999



GROUND-WATER LEVELS

CITY OF SUFFOLK

363655076332002. Local number, 58A 77 SOW 180A.

LOCATION.--Lat 36°36'55", long 76°33'20", Hydrologic Unit 03010205, 0.3 mi north of Great Dismal Swamp Wildlife Refuge Headquarters on Desert Road, 2.0 mi east of Cypress Chapel. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Lower Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in. to 1,158 ft, diameter 3 in. from 1,136 to 1,209 ft, depth 1,209 ft, screened 1,199 to 1,209 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to Apr. 15, 1992, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 34.02 ft above sea level. Measuring point: Top of casing, 2.5 ft above land-surface datum.

REMARKS.--Water level affected by regional drawdown. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

PERIOD OF RECORD.--February 1987 to current year.

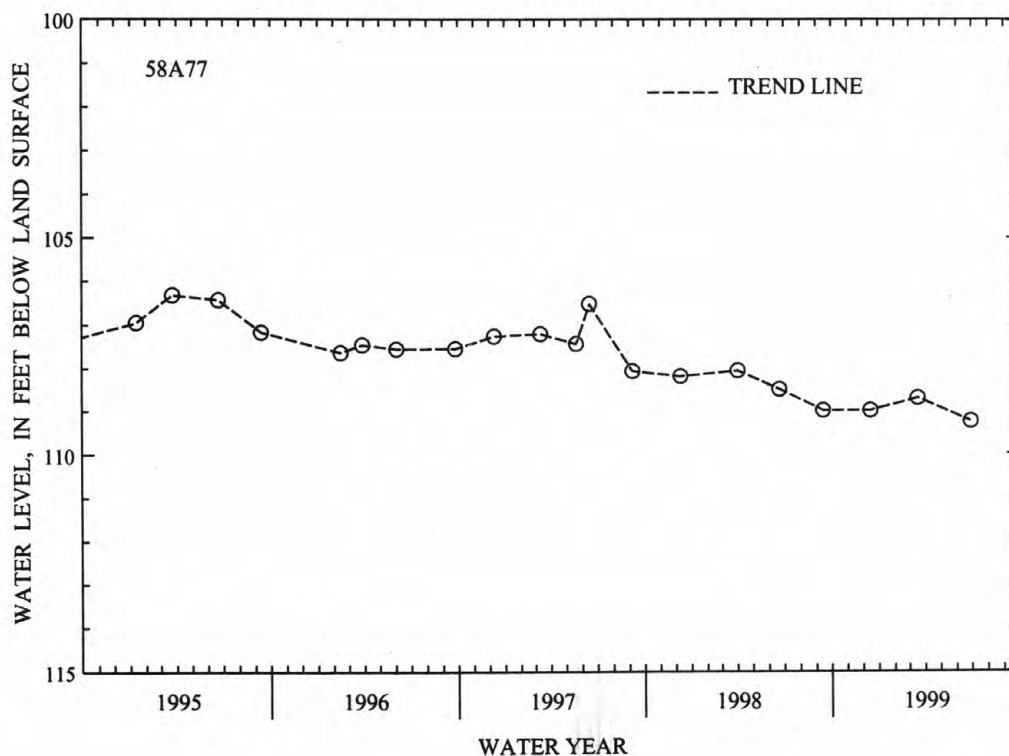
REVISED RECORDS.--WDR VA-89-1: 1987.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 96.83 ft below land-surface datum, Sept. 30, 1987; lowest measured, 109.24 ft below land-surface datum, June 29, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 16	108.99	MAR 18	108.70	JUN 29	109.24

WATER YEAR 1999	HIGHEST	108.70	MAR 18, 1999
	LOWEST	109.24	JUN 29, 1999



GROUND-WATER LEVELS

CITY OF SUFFOLK

363655076332003. Local number, 58A 78 SOW 180B.

LOCATION.--Lat 36°36'55", long 76°33'20", Hydrologic Unit 03010205, 0.3 mi north of Great Dismal Swamp Wildlife Refuge Headquarters on Desert Road, 2.0 mi east of Cypress Chapel. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in. to 811 ft, diameter 2 in. from 766 to 880 ft, depth 880 ft, screened 850 to 860 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to Apr. 15, 1992, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 34.02 ft above sea level. Measuring point: Top of casing, 2.5 ft above land-surface datum.

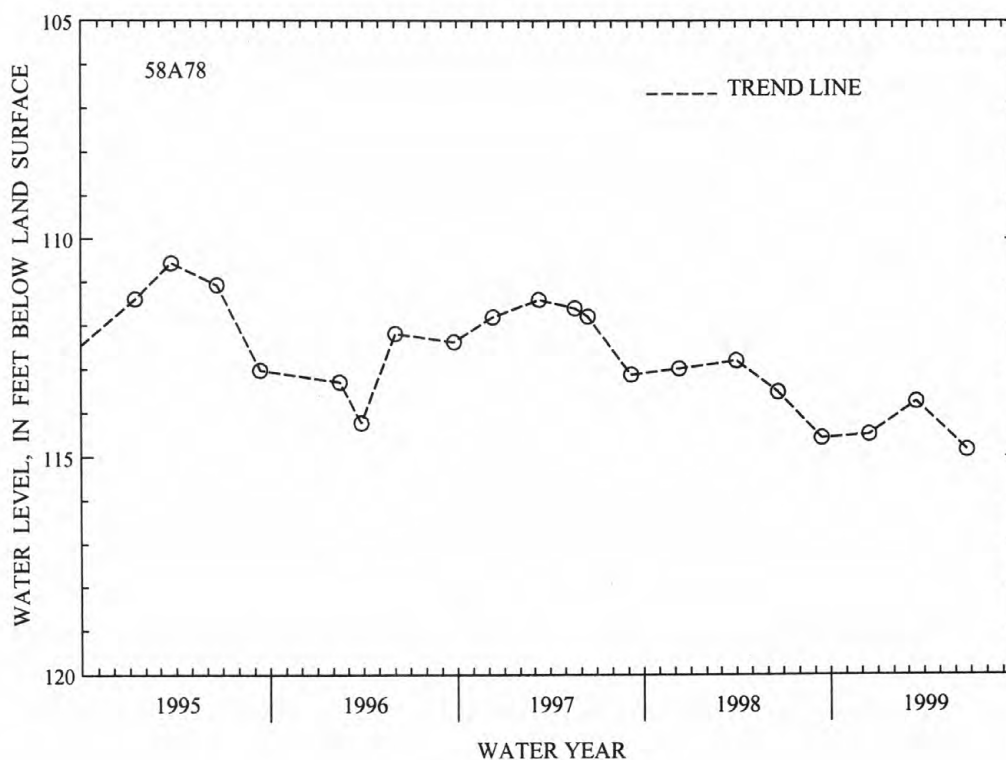
REMARKS.--Water level affected by regional drawdown and occasional pumpage for water-quality sampling.

PERIOD OF RECORD.--February 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 102.14 ft below land-surface datum, June 5, 27, 1987; lowest measured, 114.84 ft below land-surface datum, June 29, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
	DEC 16	114.48	MAR 18	113.73	JUN 29	114.84
WATER YEAR 1999	HIGHEST	113.73	MAR 18, 1999			
	LOWEST	114.84	JUN 29, 1999			



GROUND-WATER LEVELS

CITY OF SUFFOLK

363655076332004. Local number, 58A 79 SOW 180C.

LOCATION.--Lat 36°36'55", long 76°33'20", Hydrologic Unit 03010205, 0.3 mi north of Great Dismal Swamp Wildlife Refuge Headquarters on Desert Road, 2.0 mi east of Cypress Chapel. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in. to 670 ft, diameter 2 in. from 657 to 710 ft, depth 710 ft, screened 700 to 710 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to Apr. 15, 1992, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 33.97 ft above sea level. Measuring point: Top of casing, 2.4 ft above land-surface datum.

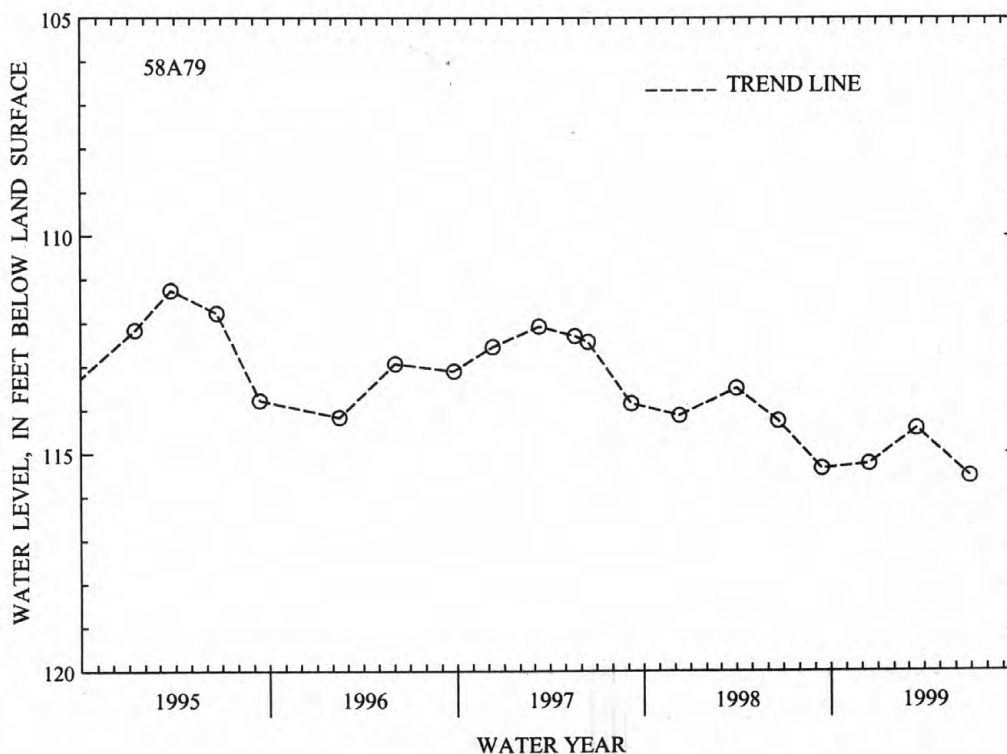
REMARKS.--Water level affected by regional drawdown and occasional pumpage from water-quality sampling.

PERIOD OF RECORD.--February 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 102.72 ft below land-surface datum, May 11, 1987; lowest measured, 115.53 ft below land-surface datum, June 29, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 16	115.24	MAR 18	114.43	JUN 29	115.53
WATER YEAR 1999	HIGHEST	114.43	MAR 18, 1999		
	LOWEST	115.53	JUN 29, 1999		



GROUND-WATER LEVELS

CITY OF SUFFOLK

363655076332005. Local number, 58A 80 SOW 180D.

LOCATION.--Lat 36°36'55", long 76°33'20", Hydrologic Unit 03010205, 0.3 mi north of Great Dismal Swamp Wildlife Refuge Headquarters on Desert Road, 2.0 mi east of Cypress Chapel. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Virginia Beach aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in. to 397 ft, diameter 2 in. from 388 to 440 ft, depth 440 ft, screened 430 to 440 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to Mar. 27, 1991, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 34.26 ft above sea level. Measuring point: Top of casing, 2.3 ft above land-surface datum.

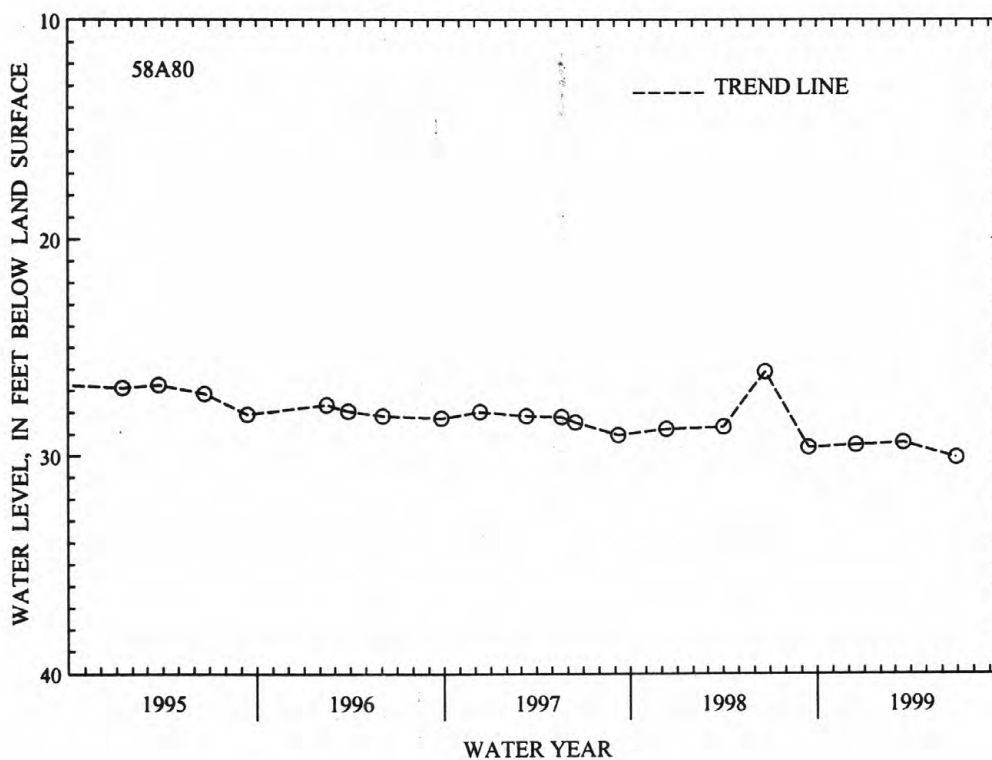
REMARKS.--Water level affected by regional drawdown.

PERIOD OF RECORD.--June 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 21.55 ft below land-surface datum, June 17, 1987; lowest measured, 30.11 ft below land-surface datum, June 29, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 16	29.52	MAR 18	29.41	JUN 29	30.11
WATER YEAR 1999	HIGHEST	29.41	MAR 18, 1999		
	LOWEST	30.11	JUN 29, 1999		



GROUND-WATER LEVELS

CITY OF SUFFOLK

363655076332006. Local number, 58A 81 SOW 180E.

LOCATION.--Lat 36°36'55", long 76°33'20", Hydrologic Unit 03010205, 0.3 mi north of Great Dismal Swamp Wildlife Refuge Headquarters on Desert Road, 2.0 mi east of Cypress Chapel. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Chickahominy-Piney Point aquifer of Eocene-Oligocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in. to 309 ft, diameter 2 in. from 298 to 329 ft, depth 329 ft, screened 319 to 329 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to Apr. 15, 1992, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 34.00 ft above sea level. Measuring point: Top of casing, 2.4 ft above land-surface datum.

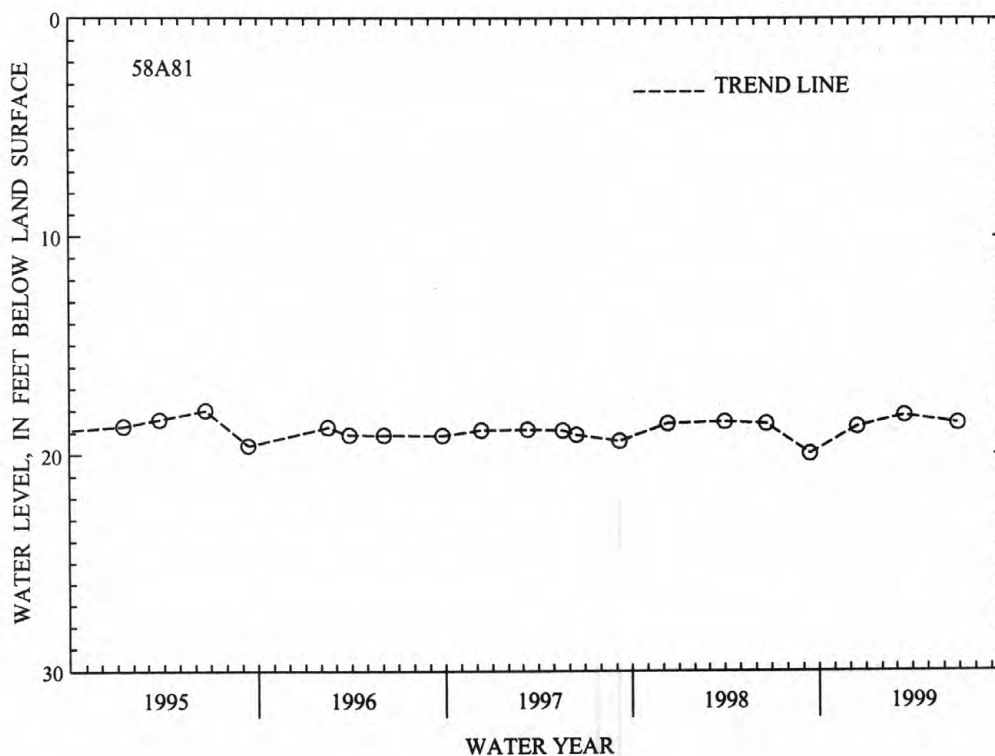
REMARKS.--This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

PERIOD OF RECORD.--February 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 15.07 ft below land-surface datum, Feb. 23, 1987; lowest measured, 19.97 ft below land-surface datum, Sept. 15, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 16	18.73	MAR 18	18.21	JUN 29	18.57
WATER YEAR 1999	HIGHEST	18.21	MAR 18, 1999		
	LOWEST	18.73	DEC 16, 1998		



GROUND-WATER LEVELS

CITY OF SUFFOLK

363655076332008. Local number, 58A 83 SOW 180G.

LOCATION.--Lat 36°36'55", long 76°33'20", Hydrologic Unit 03010205, 0.3 mi north of Great Dismal Swamp Wildlife Refuge Headquarters on Desert Road, 2.0 mi east of Cypress Chapel. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in. to 145 ft, diameter 2 in. from 135 to 165 ft, depth 165 ft, screened 155 to 165 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to Feb. 15, 1996, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 33.84 ft above sea level. Measuring point: Top of casing, 2.5 ft above land-surface datum.

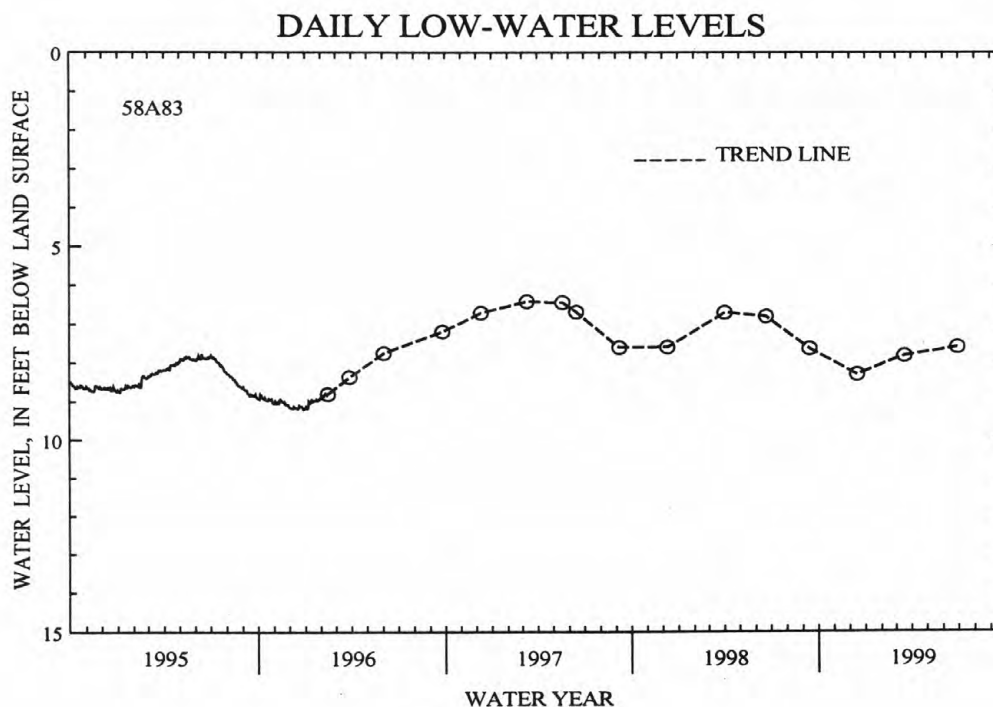
REMARKS.--This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

PERIOD OF RECORD.--February 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 6.09 ft below land-surface datum, May 29, 1990; lowest recorded, 9.20 ft below land-surface datum, Dec. 29, 30, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 16	8.30	MAR 18	7.81	JUN 29	7.59
WATER YEAR 1999	HIGHEST	7.59	JUN 29, 1999		
	LOWEST	8.30	DEC 16, 1998		



GROUND-WATER LEVELS

CITY OF SUFFOLK

363655076332009. Local number, 58A 84 SOW 180H.

LOCATION.--Lat 36°36'55", long 76°33'20", Hydrologic Unit 03010205, 0.3 mi north of Great Dismal Swamp Wildlife Refuge Headquarters on Desert Road, 2.0 mi east of Cypress Chapel. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 20 ft, screened 10 to 20 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to Feb. 15, 1996, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 33.87 ft above sea level. Measuring point: Top of casing, 2.5 ft above land-surface datum.

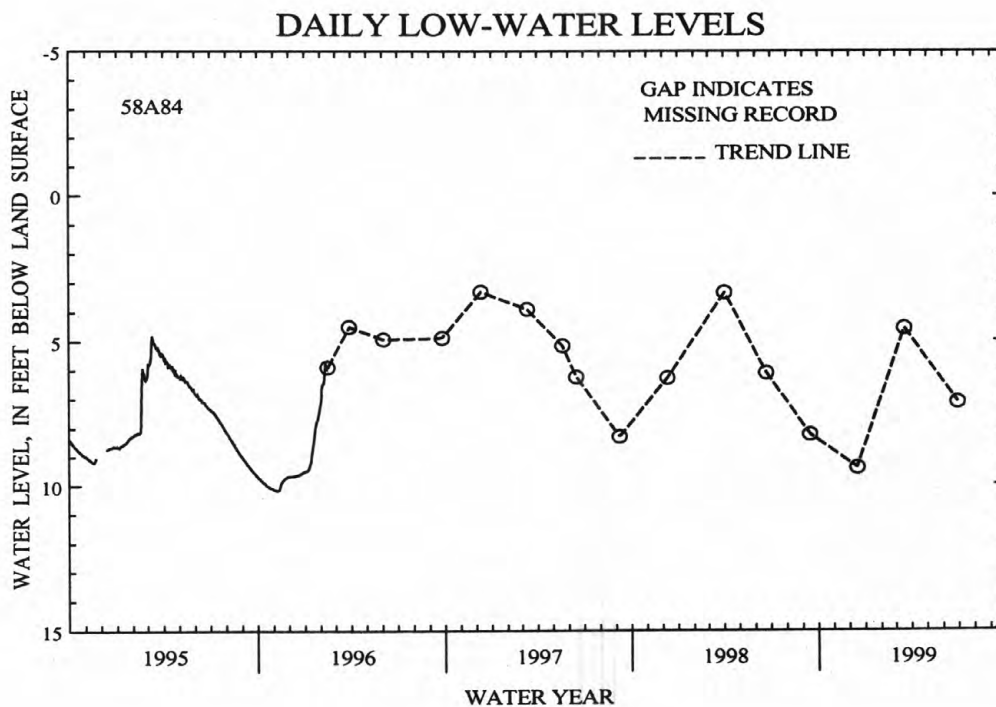
REMARKS.--Missing record due to recorder malfunction.

PERIOD OF RECORD.--February 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.47 ft below land-surface datum, Mar. 24, 1989; lowest recorded, 10.16 ft below land-surface datum, Nov. 7-10, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
	DEC 16	9.40	MAR 18	4.57	JUN 29	7.13
WATER YEAR 1999	HIGHEST	4.57	MAR 18, 1999			
	LOWEST	9.40	DEC 16, 1998			



GROUND-WATER LEVELS

CITY OF SUFFOLK

363928076332901. Local number, 58B 13.

LOCATION.--Lat 36°39'28", long 76°33'29", Hydrologic Unit 03010205, 700 ft east of State Highway 642, 4.0 mi south of Suffolk. Owner: Melvin Brinkley.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Dug unused water well, diameter 22 in., depth 15 ft.

INSTRUMENTATION.--Electronic data logger--60 minute record interval. Mar. 2, 1994 to May 28, 1999, digital recorder--60-minute punch. Sept. 20, 1993 to Mar. 2, 1994, occasional measurement with chalked tape by USGS personnel. Jan. 24, 1981, to Sept. 20, 1993, digital recorder--60-minute punch. Prior to Jan. 24, 1981, continuous strip-chart recorder.

DATUM.--Elevation of land-surface datum is 40 ft above sea level, from topographic map. Measuring point: Top of recorder shelf, 1.9 ft above land-surface datum.

REMARKS.--Missing record due to recorder malfunction.

PERIOD OF RECORD.--March 1975 to current year.

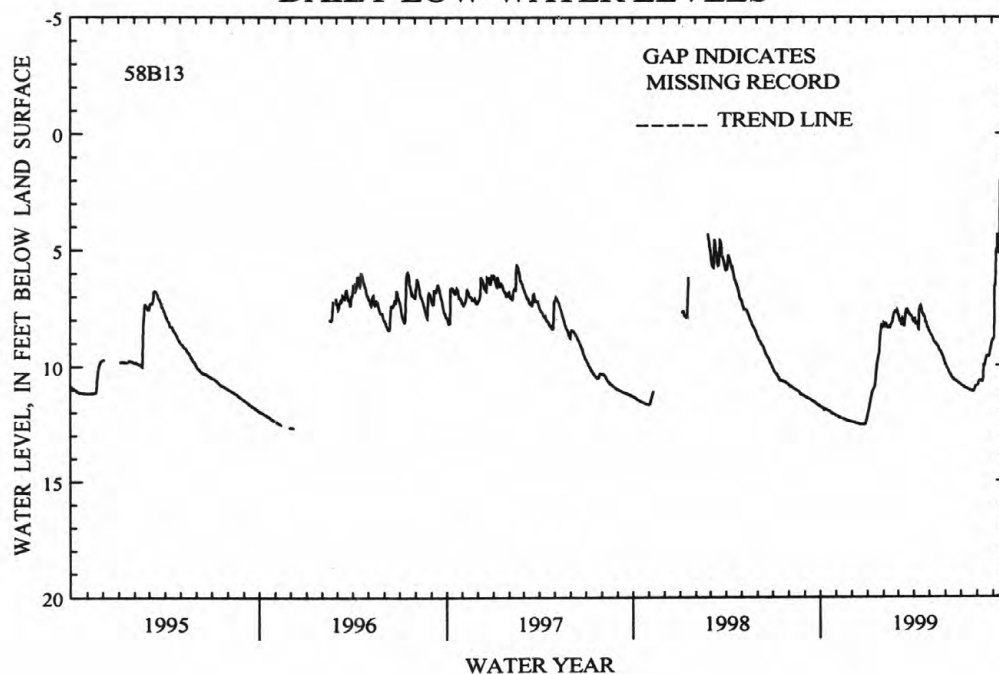
EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 0.59 ft below land-surface datum, Sept. 16, 1999; lowest recorded, 13.44 ft below land-surface datum, Jan. 23-26, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	11.80	12.19	12.45	11.74	8.27	8.04	8.18	8.63	10.06	10.86	10.71	6.59
10	11.85	12.25	12.48	11.18	8.32	7.97	8.38	8.90	10.32	10.95	10.65	5.12
15	11.91	12.30	12.51	10.90	8.29	8.04	7.40	9.03	10.50	10.99	9.94	5.14
20	11.96	12.35	12.54	9.92	7.94	7.66	7.75	9.23	10.62	11.06	9.64	4.44
25	12.06	12.38	12.54	9.04	7.64	7.77	8.11	9.45	10.69	11.10	9.59	5.73
EOM	12.13	12.41	12.26	8.31	7.60	8.03	8.41	9.79	10.77	10.87	8.95	6.19

WATER YEAR 1999 HIGHEST INSTANTANEOUS 0.59 SEP 16, 1999
LOWEST INSTANTANEOUS 12.54 DEC 19, 21-25, 1998

DAILY LOW-WATER LEVELS



GROUND-WATER LEVELS

CITY OF SUFFOLK

364318076365501. Local number, 58B268 SOW 169A.

LOCATION.--Lat 36°43'18", long 76°36'55", Hydrologic Unit 02080208, 500 ft north of Norfolk and Western Railroad near Lake Kilby, 0.5 mi west of Suffolk. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quarternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 20 ft, screened 12 to 20 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 19, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 35 ft above sea level, from topographic map. Measuring point: Top of casing, 2.5 ft above land-surface datum.

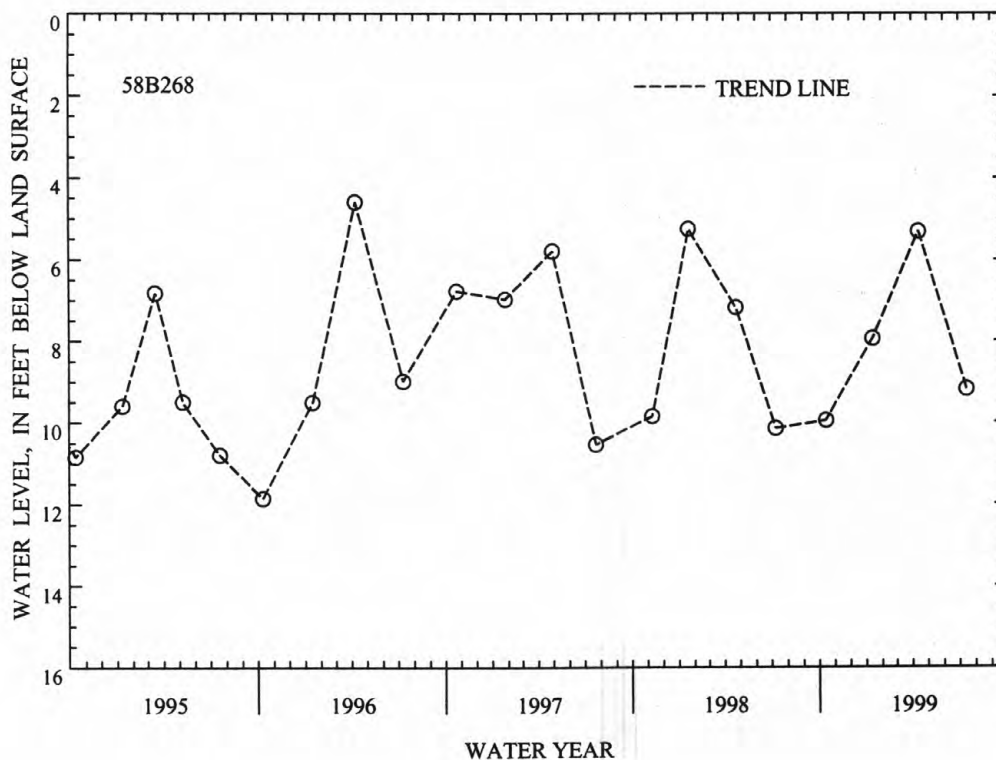
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--February 1987 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.42 ft below land-surface datum, Jan. 12, 1993; lowest measured, 11.86 ft below land-surface datum, Oct. 11, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	9.95	JAN 14	7.94	APR 14	5.31	JUL 15	9.18
WATER YEAR 1999	HIGHEST	5.31	APR 14, 1999				
	LOWEST	9.95	OCT 15, 1998				



GROUND-WATER LEVELS

CITY OF SUFFOLK

364318076365502. Local number, 58B269 SOW 169B.

LOCATION.--Lat 36°43'18", long 76°36'55", Hydrologic Unit 02080202, 500 ft north of Norfolk and Western Railroad near Lake Kilby, 0.5 mi west of Suffolk. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Aquia aquifer of Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 360 ft, screened 350 to 360 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 19, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 35 ft above sea level, from topographic map. Measuring point: Top of casing, 1.4 ft above land-surface datum.

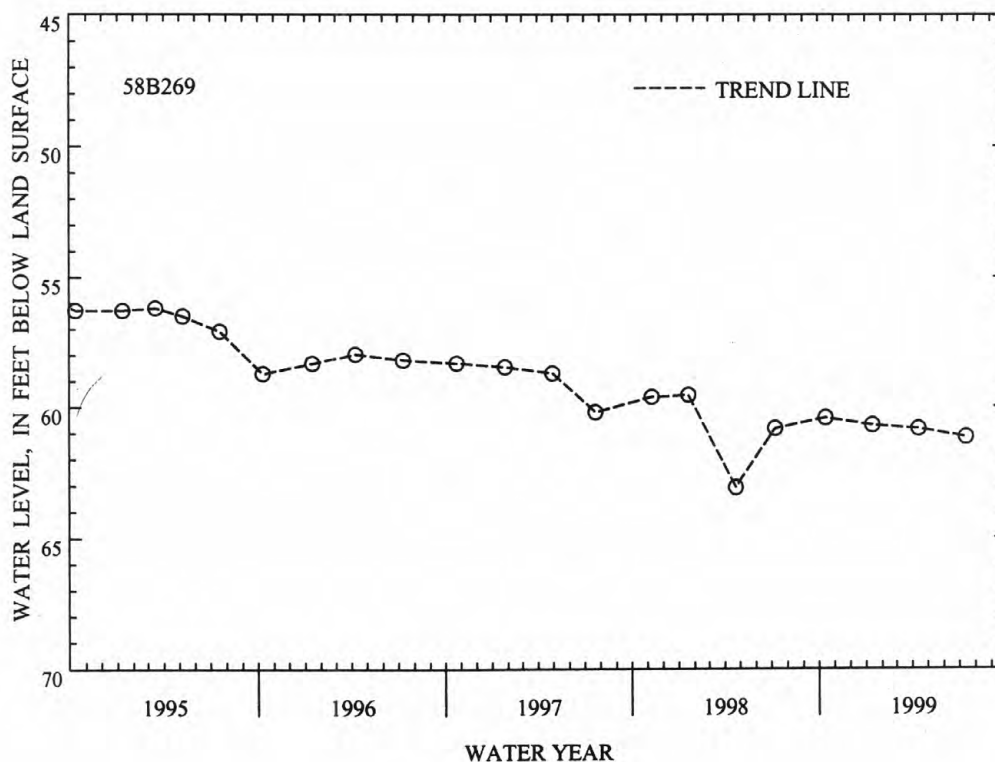
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

PERIOD OF RECORD.--July 1985 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 43.06 ft below land-surface datum, July 8, 1985; lowest measured, 63.08 ft below land-surface datum, Apr. 23, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	60.42	JAN 14	60.70	APR 14	60.83	JUL 15	61.16
WATER YEAR 1999	HIGHEST	60.42	OCT 15, 1998				
	LOWEST	61.16	JUL 15, 1999				



GROUND-WATER LEVELS

CITY OF SUFFOLK

364318076365503. Local number, 58B270 SOW 169C.

LOCATION.--Lat 36°43'18", long 76°36'55", Hydrologic Unit 02080208, 500 ft north of Norfolk and Western Railroad near Lake Kilby, 0.5 mi west of Suffolk. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 500 ft, screened 490 to 500 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to July 19, 1995, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 35 ft above sea level, from topographic map. Measuring point: Top of casing, 1.4 ft above land-surface datum.

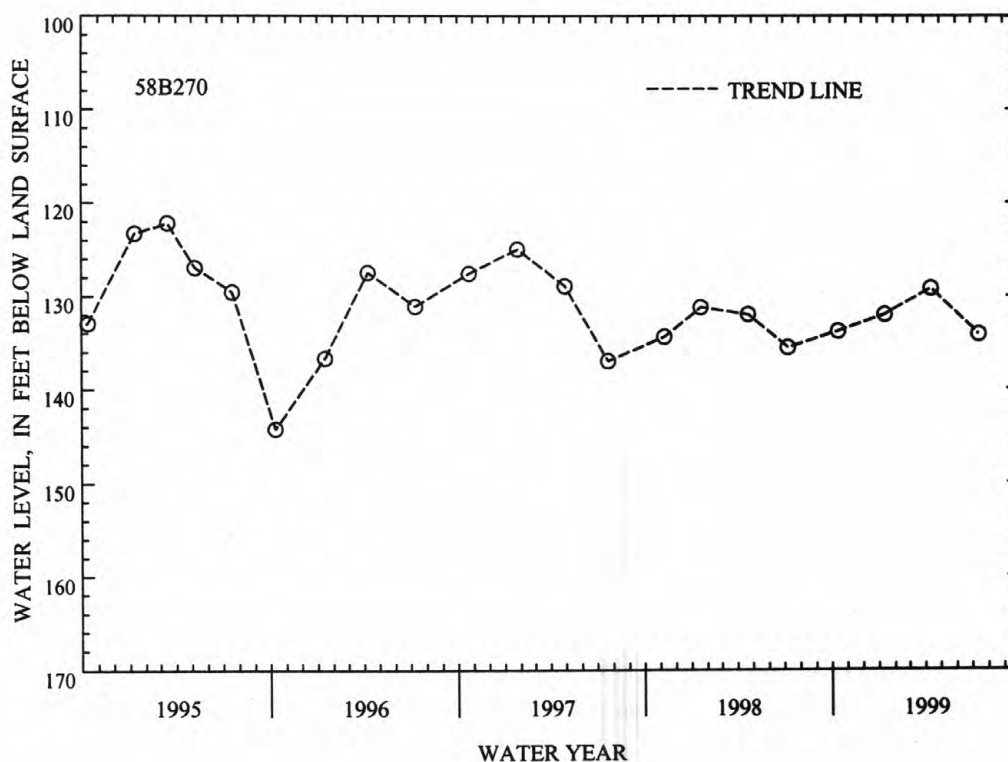
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level may be affected by local pumpage.

PERIOD OF RECORD.--July 1985 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 112.59 ft below land-surface datum, Feb. 25, 1986; lowest measured, 159.00 ft below land-surface datum, July 9, 1991.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	133.77	JAN 14	132.00	APR 14	129.19	JUL 15	134.12
WATER YEAR 1999		HIGHEST	129.19	APR 14, 1999			
		LOWEST	134.12	JUL 15, 1999			



GROUND-WATER LEVELS

CITY OF SUFFOLK

364348076363201. Local number, 58B273 SOW 169F.

LOCATION.--Lat 36°43'48", long 76°36'32", Hydrologic Unit 02080208, 100 ft south of U.S. Highway 58 near Lake Kilby, 0.2 mi west of Suffolk. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 661 ft, screened 541 to 546 ft, 567 to 572 ft, 635 to 640 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 2, 1992, to July 19, 1995, bimonthly measurement with chalked tape. Nov. 5, 1986, to Oct. 1, 1992, continuous strip-chart recorder. Prior to Nov. 5, 1986, bimonthly measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 26 ft above sea level, from topographic map. Measuring point: Top of casing, 1.2 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage.

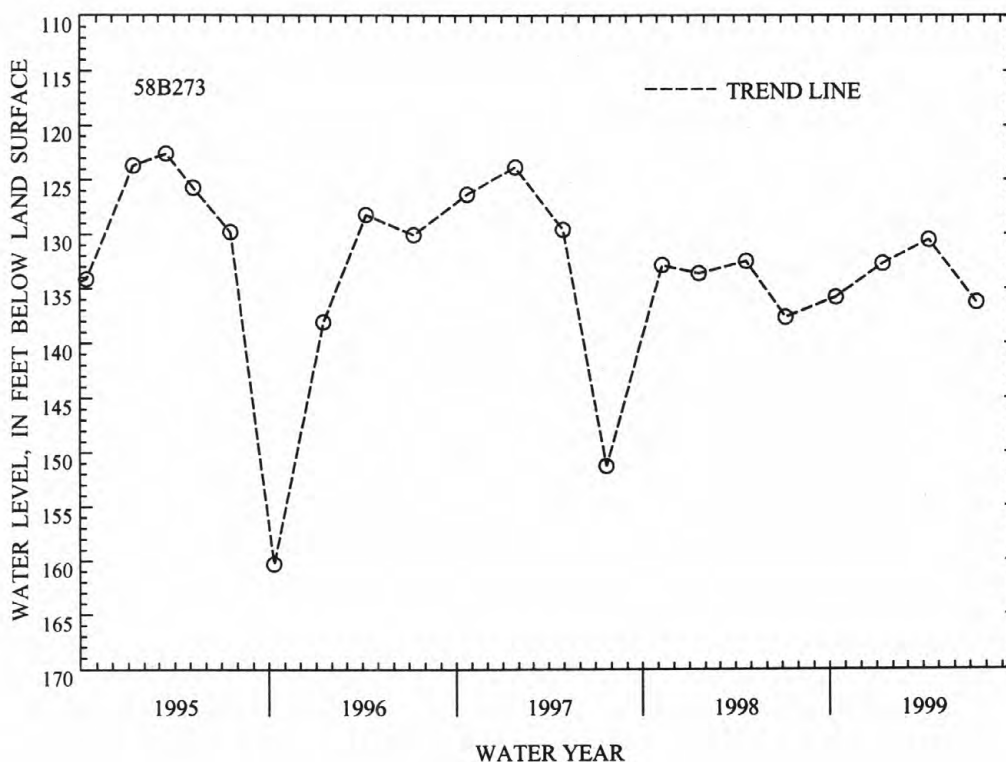
PERIOD OF RECORD.--July 1985 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 111.00 ft below land-surface datum, July 18, 1991; lowest recorded, 162.99 ft below land-surface datum, Oct. 15, 1993.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 15	135.78	JAN 14	132.70	APR 14	130.50	JUL 15	136.25

WATER YEAR 1999	HIGHEST	130.50	APR 14, 1999
	LOWEST	136.25	JUL 15, 1999



GROUND-WATER LEVELS

CITY OF SUFFOLK

365133076351201. Local number, 58C 57 SOW 141A.

LOCATION.--Lat 36°51'33", long 76°35'12", Hydrologic Unit 02080208, 500 ft west of old Chuckatuck High School in Chuckatuck. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 122 ft, screened 112 to 122 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 8, 1985, to July 19, 1995, bimonthly measurement with chalked tape. Prior to Oct. 8, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 52 ft above sea level, from topographic map. Measuring point: Top of casing, 0.5 ft above land-surface datum prior to Jan. 12, 1988; 1.0 ft Jan. 12, 1988, to Nov. 12, 1991; 2.4 ft Nov. 13, 1991 to July 9, 1998; 1.80 ft thereafter.

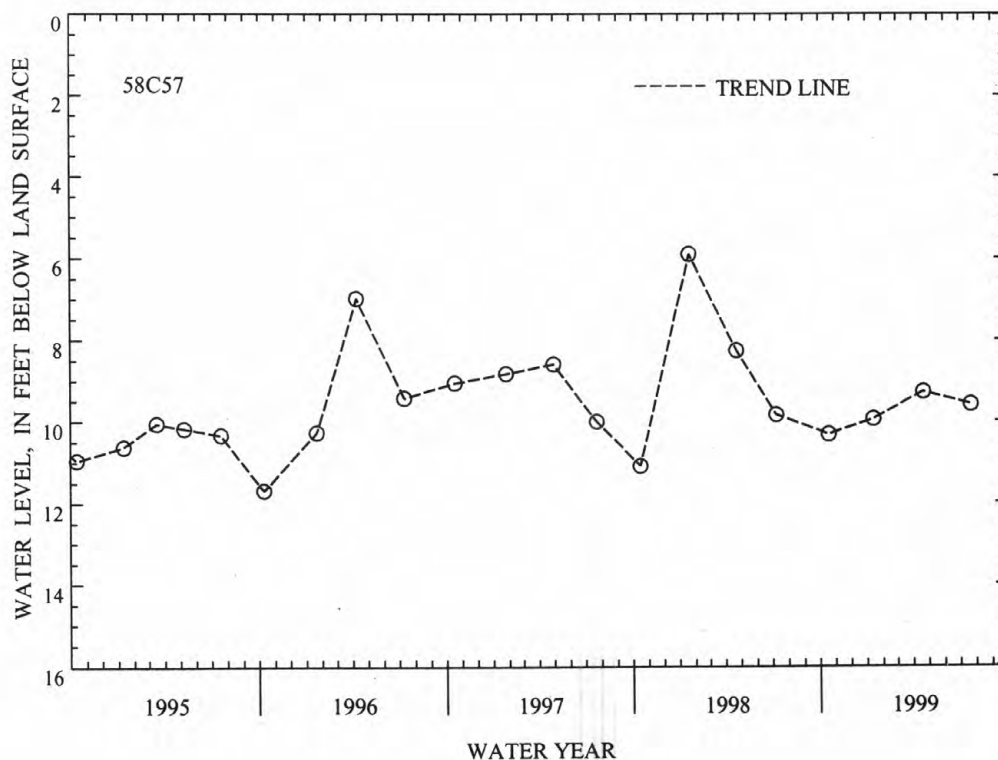
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--February 1980 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.90 ft below land-surface datum, Jan. 21, 1998; lowest measured, 11.68 ft below land-surface datum, Oct. 11, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	10.32	JAN 14	9.94	APR 21	9.27	JUL 22	9.58
WATER YEAR 1999	HIGHEST	9.27	APR 21, 1999				
	LOWEST	10.32	OCT 19, 1998				



GROUND-WATER LEVELS

CITY OF SUFFOLK

365133076351203. Local number, 58C 59 SOW 141C.

LOCATION.--Lat 36°51'33", long 76°35'12", Hydrologic Unit 02080208, 500 ft west of old Chuckatuck High School in Chuckatuck. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 447 ft, screened 437 to 447 ft.

INSTRUMENTATION.--Continuous strip-chart recorder. Prior to May 5, 1981, occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 52 ft above sea level, from topographic map. Measuring point: Top of casing, 1.5 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Missing record due to recorder malfunction. Water level affected by local pumpage.

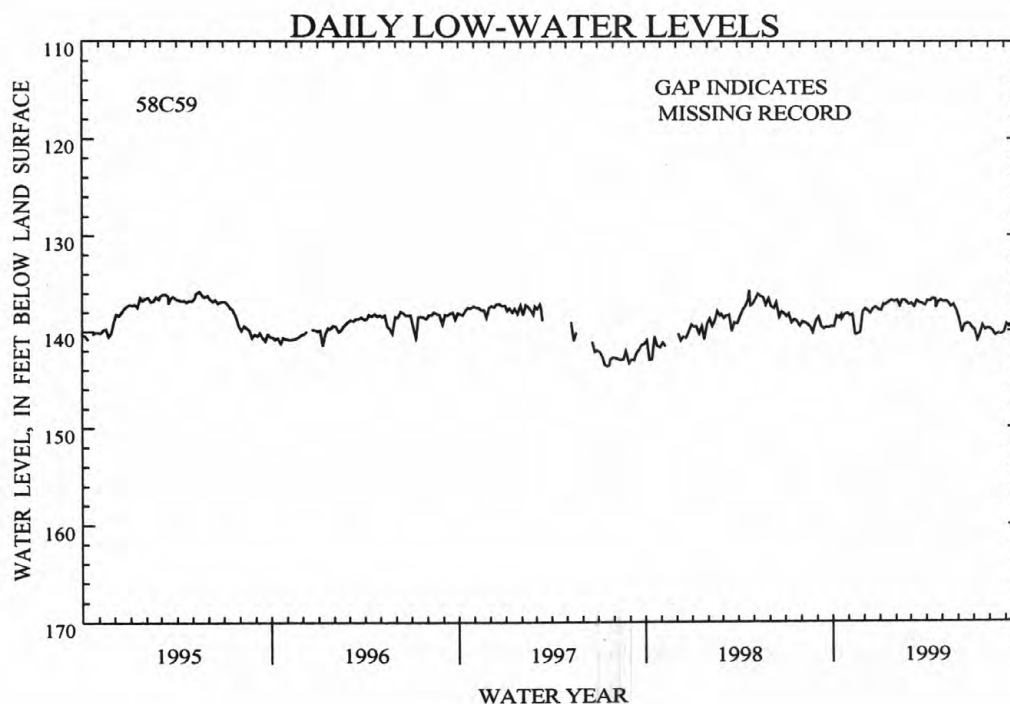
PERIOD OF RECORD.--April 1980 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 108.80 ft below land-surface datum, June 30, 1980; lowest recorded, 151.00 ft below land-surface datum, Feb. 17, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	139.53	138.36	137.65	137.81	136.73	137.08	136.80	136.93	138.72	139.89	139.76	139.23
10	138.37	138.25	137.90	137.16	137.36	137.43	136.85	136.85	140.16	140.94	140.01	139.52
15	138.62	140.33	138.11	137.11	136.73	136.78	136.58	137.03	139.38	140.39	140.42	139.26
20	138.74	140.27	137.64	136.96	136.75	137.02	136.64	137.44	139.18	139.36	140.25	141.84
25	138.29	140.11	137.51	136.73	137.01	137.08	136.98	137.23	139.22	139.81	140.31	139.84
EOM	138.12	137.96	137.77	136.88	137.24	137.32	136.76	137.87	139.60	139.68	140.17	139.42

WATER YEAR 1999 HIGHEST INSTANTANEOUS 136.18 APR 16, 1999
 LOWEST INSTANTANEOUS 142.08 SEP 19, 1999



GROUND-WATER LEVELS

CITY OF SUFFOLK

365133076351204. Local number, 58C 60 SOW 141D.

LOCATION.--Lat 36°51'33", long 76°35'12", Hydrologic Unit 02080208, 500 ft west of old Chuckatuck High School in Chuckatuck. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 20 ft, screened 10 to 20 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 8, 1985, to July 19, 1995, bimonthly measurement with chalked tape. Prior to Oct. 8, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 50 ft above sea level, from topographic map. Measuring point: Top of casing, 1.5 ft above land-surface datum prior to Jan. 12, 1988; 1.0 ft thereafter.

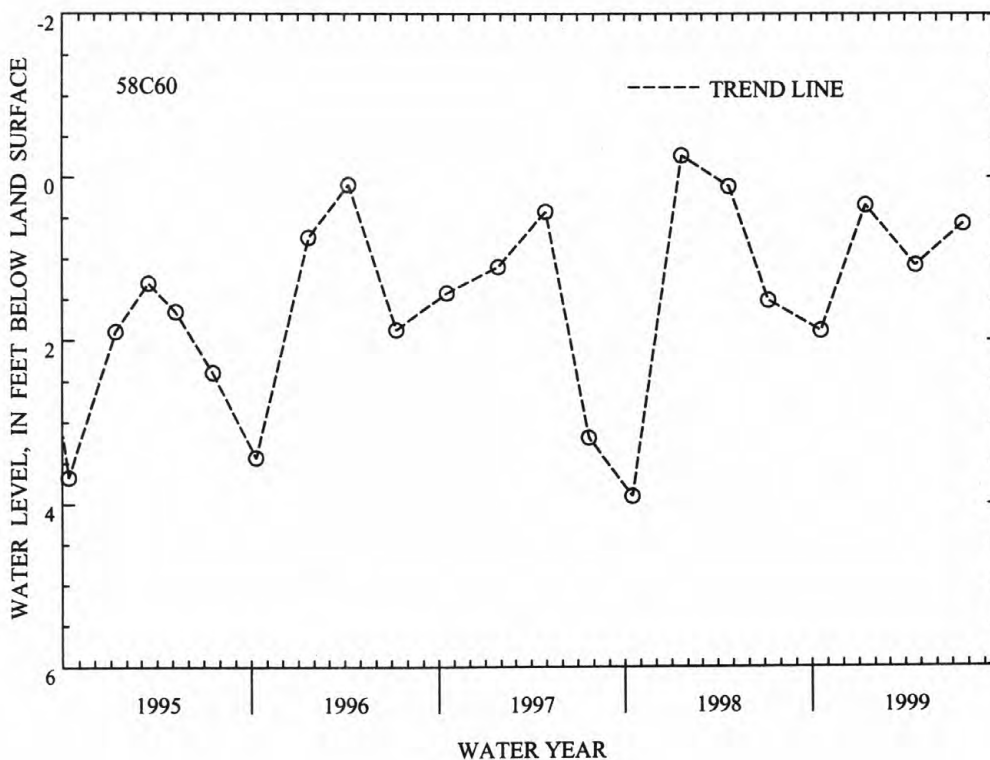
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--February 1980 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.27 ft above land-surface datum, Jan. 21, 1998; lowest measured, 4.20 ft below land-surface datum, Oct. 15, 1993.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	1.88	JAN 14	0.34	APR 21	1.08	JUL 22	0.57
WATER YEAR 1999		HIGHEST	0.34	JAN 14, 1999			
		LOWEST	1.88	OCT 19, 1998			



GROUND-WATER LEVELS

CITY OF SUFFOLK

364731076355501. Local number, 58C 61 SOW 159A.

LOCATION.--Lat 36°47'31", long 76°35'55", Hydrologic Unit 02080208, 0.5 mi northwest of intersection of State Highways 622 and 634, 2.3 mi northwest of Elephant Fork. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 25 ft, screened 20 to 25 ft, sounded to 17.50 ft on July 8, 1985, redrilled to 25 ft on May 15, 1990.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 7, 1985, to July 26, 1995, bimonthly measurement with chalked tape. Prior to Oct. 7, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 40 ft above sea level, from topographic map. Measuring point: Top of casing, 0.85 ft above land-surface datum prior to June 25, 1990; 1.55 ft thereafter.

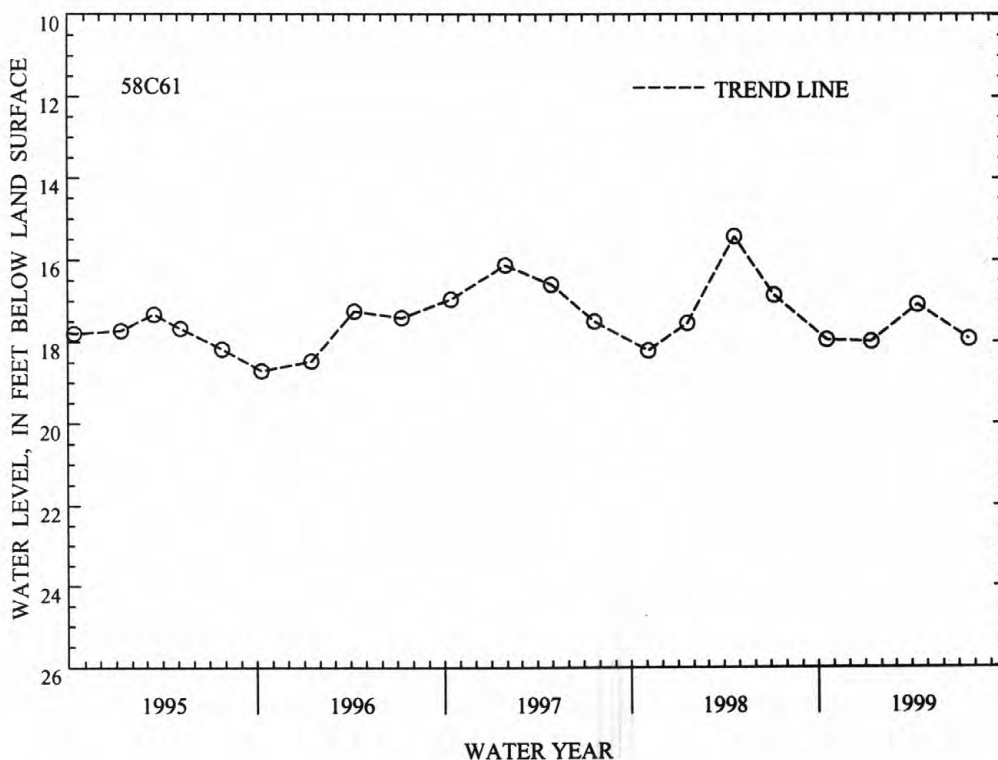
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Well reported dry several days in 1985-1990.

PERIOD OF RECORD.--June 1981 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 8.95 ft below land-surface datum, Apr. 19, 1984; lowest measured, 18.70 ft below land-surface datum, Oct. 11, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	17.94	JAN 14	17.98	APR 14	17.08	JUL 22	17.92
WATER YEAR 1999	HIGHEST	17.08	APR 14, 1999				
	LOWEST	17.98	JAN 14, 1999				



GROUND-WATER LEVELS

CITY OF SUFFOLK

364731076355502. Local number, 58C 62 SOW 159B.

LOCATION.--Lat 36°47'31", long 76°35'55", Hydrologic Unit 02080208, 0.5 mi northwest of intersection of State Highways 622 and 634, 2.3 mi northwest of Elephant Fork. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 2 in., depth 575 ft, screened 555 to 575 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 7, 1985, to July 26, 1995, bimonthly measurement with chalked tape. Prior to Oct. 7, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 40 ft above sea level, from topographic map. Measuring point: Top of casing, 1.6 ft above land-surface datum.

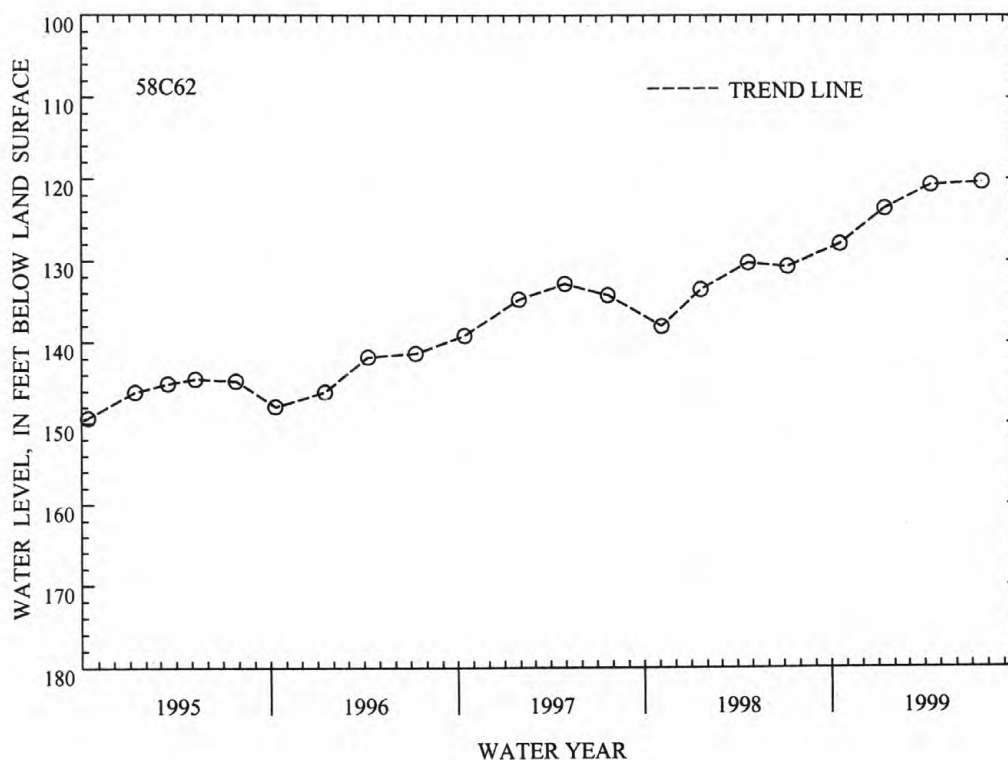
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level may be affected by local pumpage.

PERIOD OF RECORD.--June 1981 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 120.36 ft below land-surface datum, July 22, 1999; lowest measured, 169.26 ft below land-surface datum, Jan. 11, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	127.90	JAN 14	123.57	APR 14	120.69	JUL 22	120.36
WATER YEAR 1999		HIGHEST	120.36	JUL 22, 1999			
		LOWEST	127.90	OCT 19, 1998			



GROUND-WATER LEVELS

SURRY COUNTY

370800076500701. Local number, 56F 2 SOW 039.

LOCATION.--Lat 37°08'00", long 76°50'07", Hydrologic Unit 02080206, off State Highway 10, at Surry County Administration building in Surry. Owner: Town of Surry.

AQUIFER.--Aquia aquifer of Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 367 ft, screened 350 to 362 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 8, 1985, to July 10, 1995, bimonthly measurement with chalked tape. Jan. 10, 1976, to Oct. 7, 1985, occasional measurement with chalked tape. Mar. 15, 1971, to Jan. 10, 1976, continuous strip-chart recorder. Prior to Mar. 15, 1971, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 122 ft above sea level, from topographic map. Measuring point: Top of casing, 1.1 ft above land-surface datum.

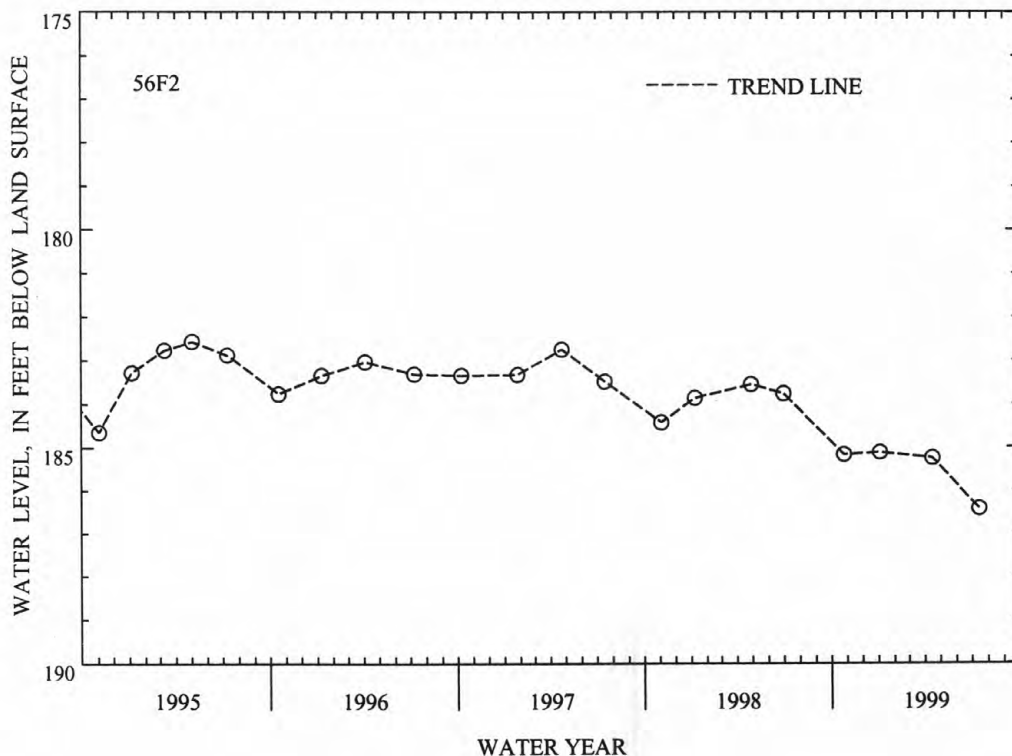
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

PERIOD OF RECORD.--December 1970 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 146.43 ft below land-surface datum, Mar. 25, 1971; lowest measured, 186.44 ft below land-surface datum, July 15, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	185.17	JAN 04	185.12	APR 16	185.25	JUL 15	186.44
WATER YEAR 1999	HIGHEST	185.12	JAN 04, 1999				
	LOWEST	186.44	JUL 15, 1999				



GROUND-WATER LEVELS

SURRY COUNTY

370712076413201. Local number, 57E 11 SOW 094A.

LOCATION.--Lat 37°07'12", long 76°41'32", Hydrologic Unit 02080206, 0.5 mi east of State Highway 690, 2.5 mi northwest of Bacons Castle. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 605 ft, screened 595 to 605 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 7, 1985, to July 10, 1995, bimonthly measurement with chalked tape. Prior to Oct. 7, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 45 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage and regional drawdown.

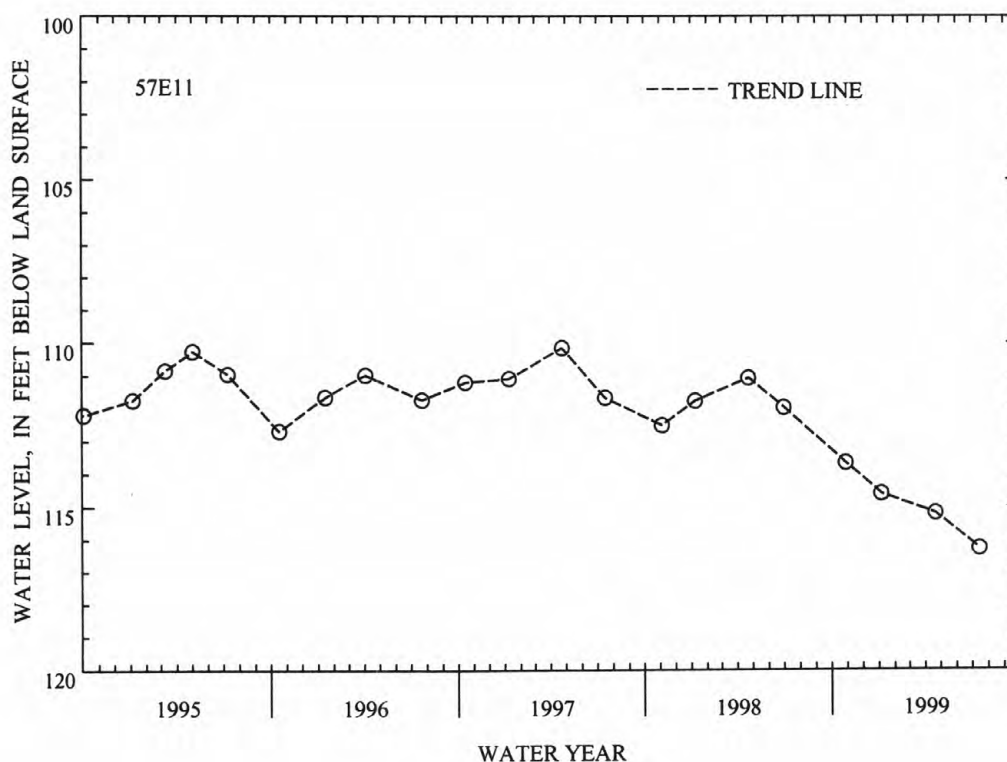
PERIOD OF RECORD.--July 1978 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 92.19 ft below land-surface datum, July 24, 1980; lowest measured, 116.28 ft below land-surface datum, July 15, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	113.65	JAN 06	114.59	APR 21	115.19	JUL 15	116.28

WATER YEAR 1999	HIGHEST	113.65	OCT 29, 1998
	LOWEST	116.28	JUL 15, 1999



GROUND-WATER LEVELS

SURRY COUNTY

370712076413203. Local number, 57E 13 SOW 094C.

LOCATION.--Lat 37°07'12", long 76°41'32", Hydrologic Unit 02080206, 0.5 mi east of State Highway 690, 2.5 mi northwest of Bacons Castle. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in. to 41 ft, diameter 3 in. from 41 to 46 ft, depth 46 ft, screened 41 to 46 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 7, 1985, to July 10, 1995, bimonthly measurement with chalked tape. Prior to Oct. 7, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 45 ft above sea level, from topographic map. Measuring point: Top of casing, 1.6 ft above land-surface datum.

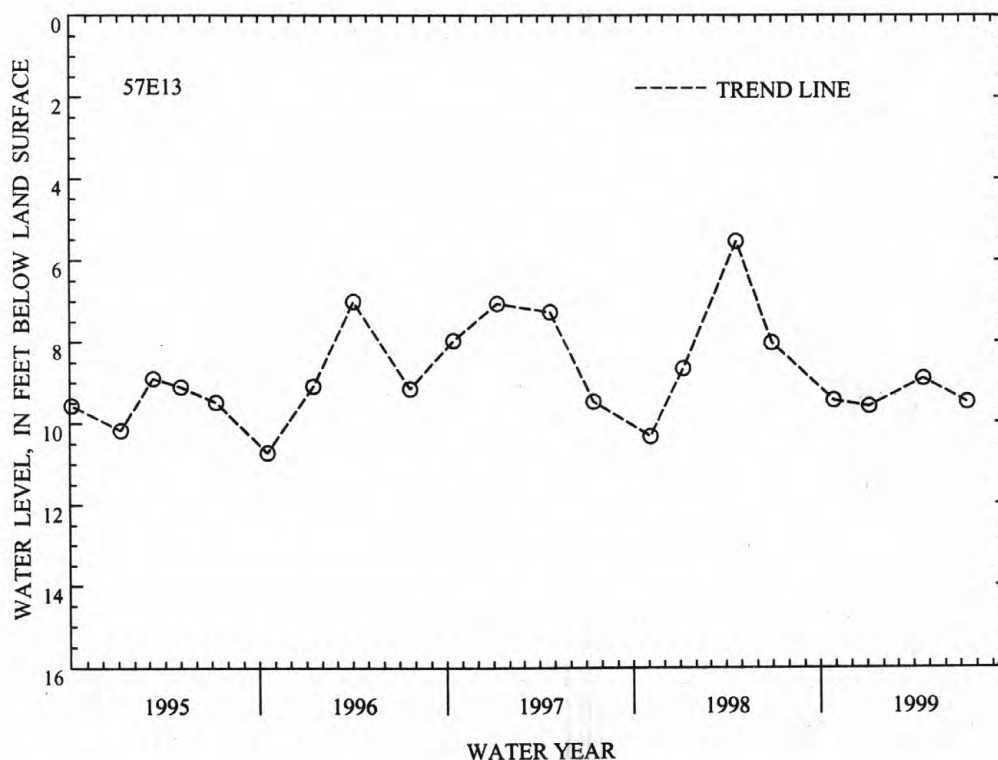
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--July 1978 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.90 ft below land-surface datum, May 29, 1980; lowest measured, 11.17 ft below land-surface datum, Dec. 13, 1981.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	9.44	JAN 06	9.59	APR 21	8.90	JUL 15	9.49
WATER YEAR 1999		HIGHEST	8.90	APR 21, 1999			
		LOWEST	9.59	JAN 06, 1999			



GROUND-WATER LEVELS

SURRY COUNTY

371132076405502. Local number, 57F 24 SOW 087B.

LOCATION.--Lat 37°11'32", long 76°40'55", Hydrologic Unit 02080206, at the end of State Highway 650 in Homewood, 7.6 mi northeast of Bacons Castle. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 520 ft, screened 510 to 520 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 7, 1985, to July 10, 1995, bimonthly measurement with chalked tape. Prior to Oct. 7, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 5 ft above sea level, from topographic map. Measuring point: Top of casing, 2.0 ft above land-surface datum.

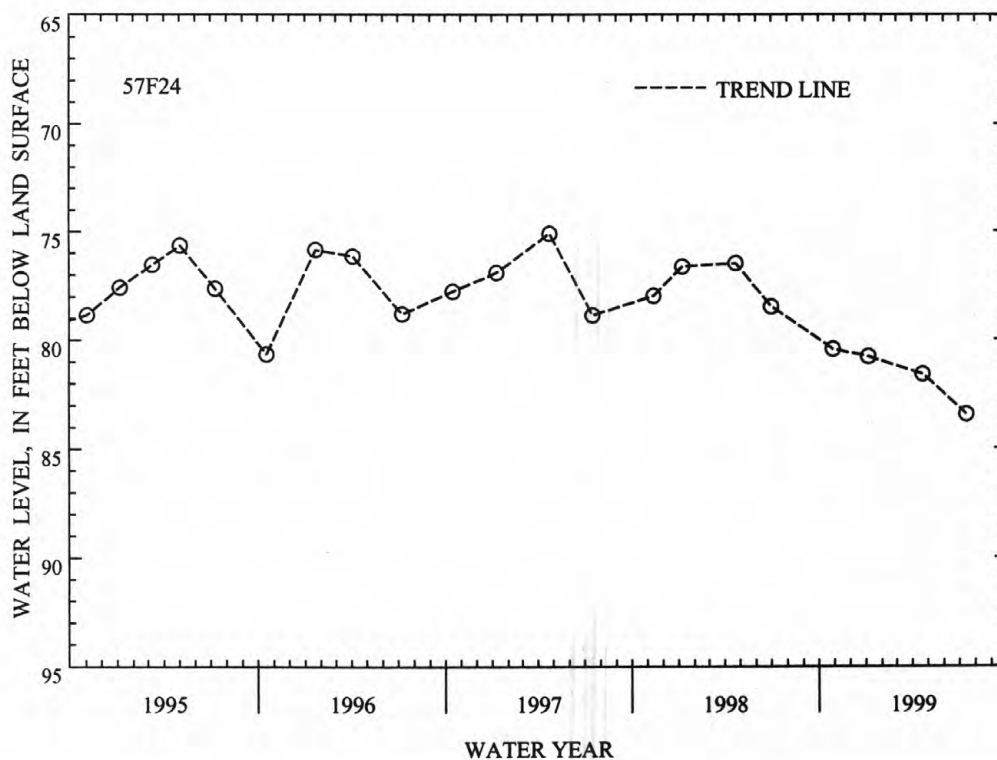
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by local pumpage and regional drawdown.

PERIOD OF RECORD.--July 1978 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 62.17 ft below land-surface datum, Aug. 17, 1982; lowest measured, 84.60 ft below land-surface datum, Nov. 3, 1993.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 29	80.43	JAN 06	80.77	APR 21	81.58	JUL 15	83.43
WATER YEAR 1999	HIGHEST	80.43	OCT 29, 1998				
	LOWEST	83.43	JUL 15, 1999				



GROUND-WATER LEVELS

SUSSEX COUNTY

365530077104002. Local number, 53D 6 SOW 179A.

LOCATION.--Lat 36°55'30", long 77°10'40", Hydrologic Unit 03010201, off State Highway 634, 1.4 mi south of State Highway 35, and 1.7 mi southeast of Homeville. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Lower Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in. to 460 ft, diameter 2 in., 439 ft to 460 ft, depth 470 ft, screened 460 to 470 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to Mar. 1, 1988, digital recorder--60-minute punch.

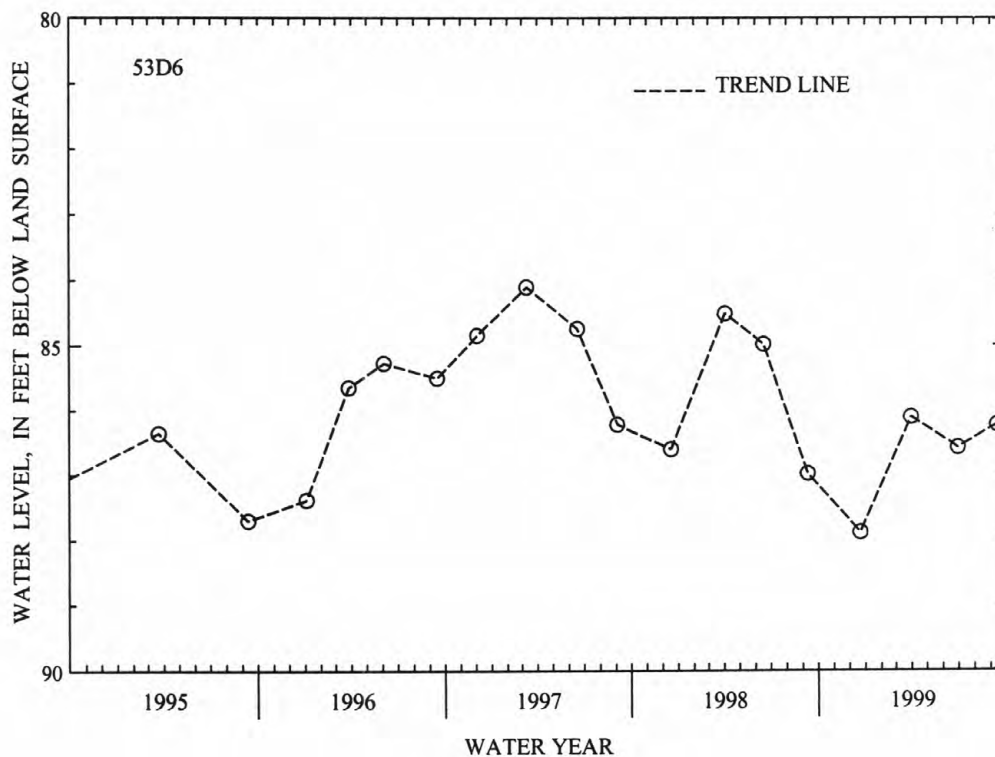
DATUM.--Elevation of land-surface datum is 90 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum.

PERIOD OF RECORD.--November 1985 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 78.50 ft below land-surface datum, Feb. 12, 1988; lowest measured, 87.89 ft below land-surface datum, Dec. 22, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 22	87.89	MAR 31	86.11	JUN 30	86.58	SEP 14	86.23
WATER YEAR 1999		HIGHEST	86.11	MAR 31, 1999			
		LOWEST	87.89	DEC 22, 1998			



GROUND-WATER LEVELS

SUSSEX COUNTY

365530077104006. Local number, 53D 10 SOW 179E.

LOCATION.--Lat 36°55'30", long 77°10'40", Hydrologic Unit 03010201, off State Highway 634, 1.4 mi south of State Highway 35, and 1.7 mi southeast of Homeville. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in. to 130 ft, diameter 4 in. from 140 to 145 ft, depth 145 ft, screened 130 to 140 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to Mar. 1, 1988, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 90 ft above sea level, from topographic map. Measuring point: Top of casing, 1.3 ft above land-surface datum.

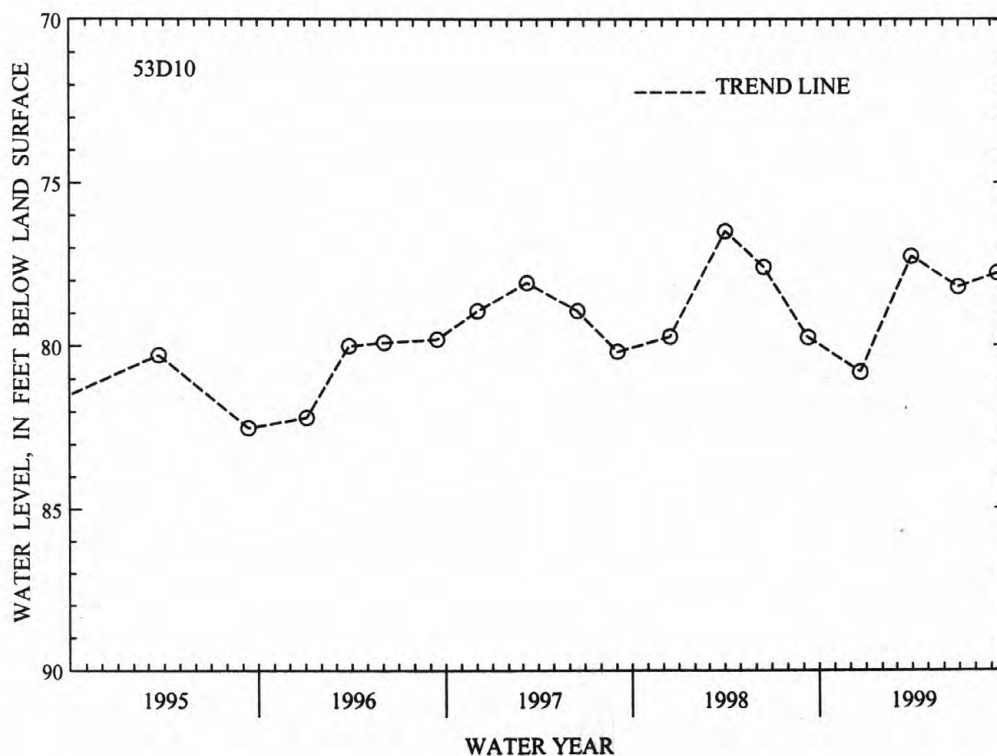
REMARKS.--Water level affected by local pumpage and regional drawdown.

PERIOD OF RECORD.--December 1985 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 76.25 ft below land-surface datum, Apr. 24, 1987; lowest measured, 82.50 ft below land-surface datum, Sept. 12, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 22	80.81	MAR 31	77.26	JUN 30	78.20	SEP 14	77.77
WATER YEAR 1999	HIGHEST	77.26	MAR 31, 1999				
	LOWEST	80.81	DEC 22, 1998				



GROUND-WATER LEVELS

SUSSEX COUNTY

365530077104007. Local number, 53D 11 SOW 179F.

LOCATION.--Lat 36°55'30", long 77°10'40", Hydrologic Unit 03010201, off State Highway 634, 1.4 mi south of State Highway 35, and 1.7 mi southeast of Homeville. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Aquia aquifer of Paleocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in. to 82 ft, diameter 4 in. from 92 to 97 ft, depth 97 ft, screened 82 to 92 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to Mar. 1, 1988, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 90 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum.

REMARKS.--Water level affected by local pumpage.

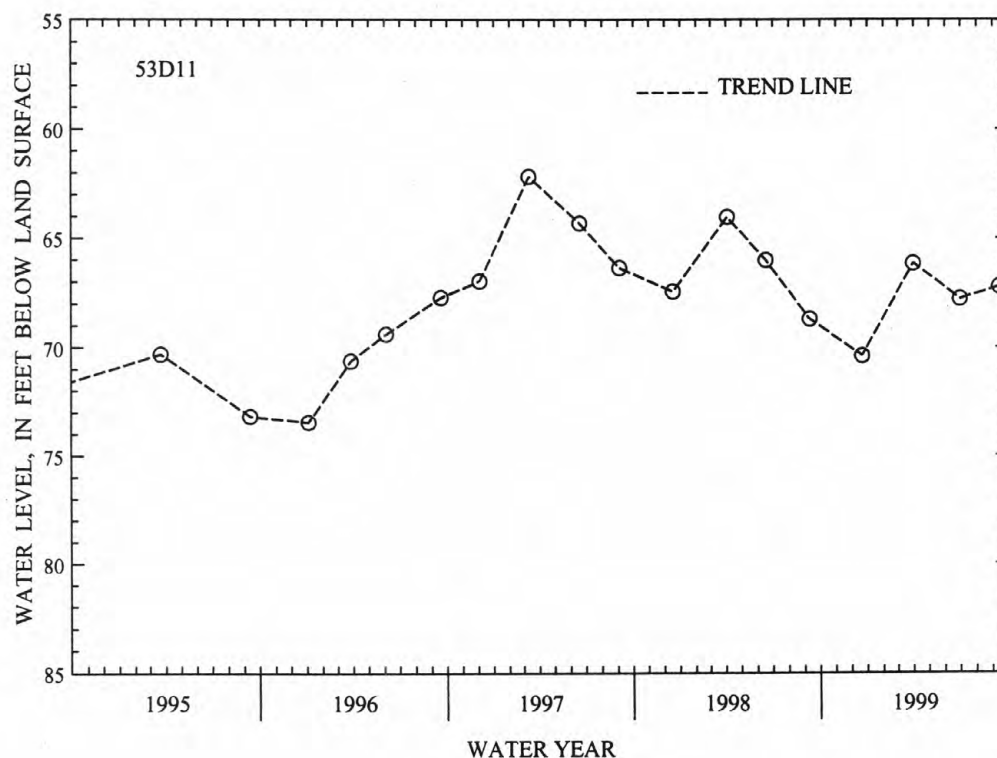
PERIOD OF RECORD.--December 1985 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 62.17 ft below land-surface datum, Mar. 11, 1997; lowest recorded, 77.16 ft below land-surface datum, Nov. 28 to Dec. 1, 1987.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 22	70.38	MAR 31	66.14	JUN 30	67.77	SEP 14	67.21

WATER YEAR 1999	HIGHEST	66.14	MAR 31, 1999
	LOWEST	70.38	DEC 22, 1998



GROUND-WATER LEVELS

SUSSEX COUNTY

365235077150501. Local number, 53E 5 SOW 045.

LOCATION.--Lat 37°02'37", long 77°11'30", Hydrologic Unit 03010201, 400 ft northeast of State Highway 625, 2.5 mi north of Newville. Owner: Butler Lumber Company.

AQUIFER.--Aquia aquifer of Paleocene age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in., depth 172 ft, screened 162 to 172 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by USGS personnel. Prior to Mar. 1, 1989, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 126.65 ft above sea level. Measuring point: Top of casing, 0.3 ft above land-surface datum prior to Mar. 8, 1988; 1.2 ft thereafter.

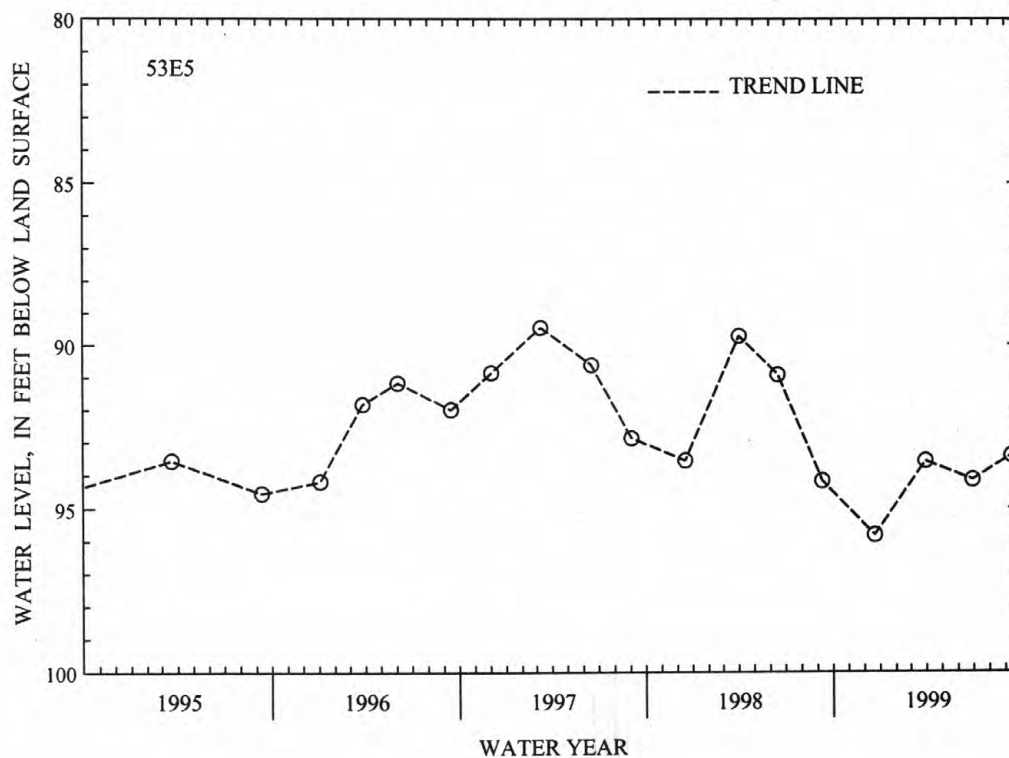
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division prior to Mar. 1, 1989; U.S. Geological Survey thereafter. Water level affected by local pumpage and regional drawdown.

PERIOD OF RECORD.--September 1971, October 1974 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 81.90 ft below land-surface datum, Mar. 16, 1976; lowest measured, 95.82 ft below land-surface datum, Dec. 22, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
DEC 22	95.82	MAR 31	93.57	JUN 30	94.14	SEP 14	93.41
WATER YEAR 1999	HIGHEST	93.41	SEP 14, 1999				
	LOWEST	95.82	DEC 22, 1998				



GROUND-WATER LEVELS

CITY OF VIRGINIA BEACH

364850076120701. Local number, 61C 23 SOW 129.

LOCATION.--Lat 36°48'50", long 76°12'07", Hydrologic Unit 02080208, at Woodstock Elementary School in Virginia Beach. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 8 in. to 68 ft, diameter 6 in. from 68 to 78 ft, depth 78 ft, screened 68 to 73 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 9, 1985, to July 5, 1995, bimonthly measurement with chalked tape. Prior to Oct. 9, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, 0.1 ft above land-surface datum.

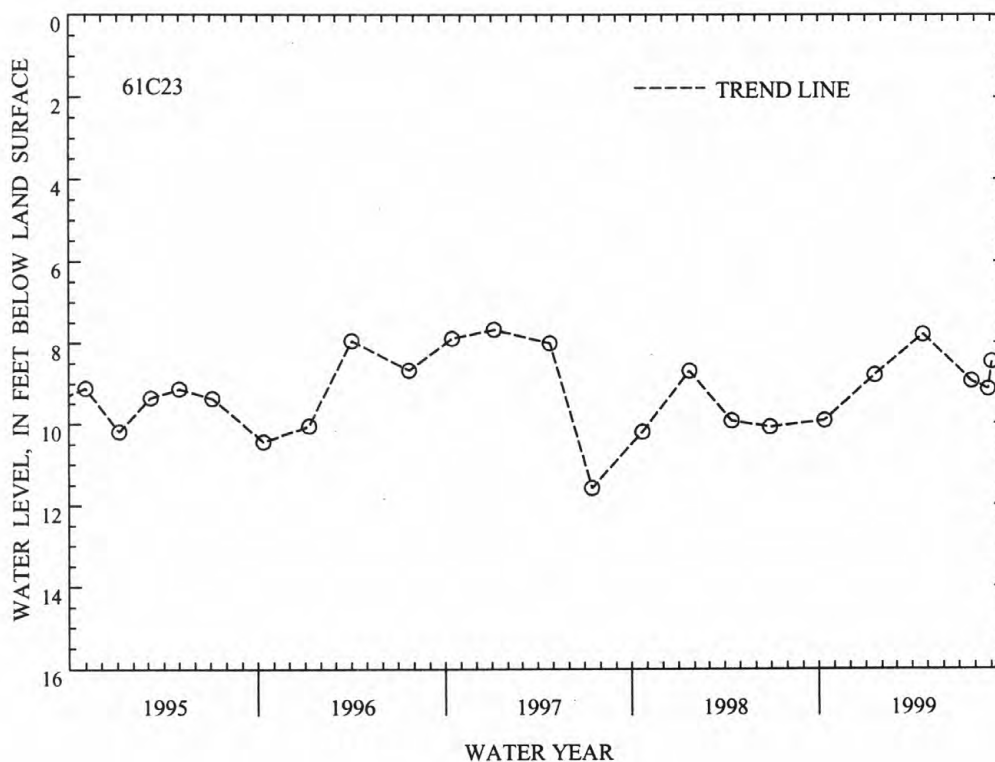
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--April 1978 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.34 ft below land-surface datum, Apr. 22, 1994; lowest measured, 17.77 ft below land-surface datum, Aug. 26, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 13	9.92	JAN 19	8.79	APR 23	7.79	JUL 26	8.94	AUG 27	9.14	SEP 03	8.46
WATER YEAR 1999		HIGHEST	7.79	APR 23, 1999							
		LOWEST	9.92	OCT 13, 1998							



GROUND-WATER LEVELS
CITY OF VIRGINIA BEACH

364920076093201. Local number, 61C 27 SOW 174A.

LOCATION.--Lat 36°49'20", long 76°09'32", Hydrologic Unit 02080208, at Kempsville High School in Virginia Beach.
Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 3 in., depth 175 ft, screened 160 to 170 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 9, 1985, to July 5, 1995, bimonthly measurement with chalked tape. Prior to Oct. 9, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, 0.8 ft above land-surface datum.

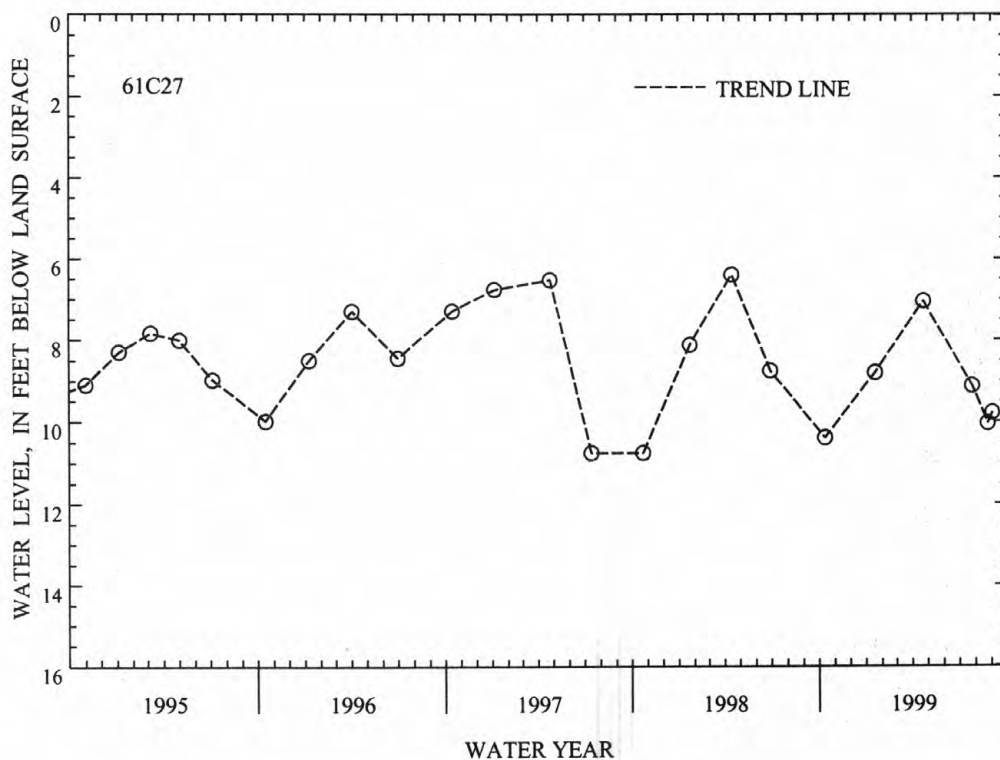
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--April 1984 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.09 ft below land-surface datum, Apr. 25, 1984; lowest measured, 11.73 ft below land-surface datum, Aug. 6, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 13	10.39	JAN 19	8.80	APR 23	7.05	JUL 26	9.12	AUG 25	10.04	SEP 03	9.78
WATER YEAR 1999		HIGHEST	7.05	APR 23, 1999							
		LOWEST	10.39	OCT 13, 1998							



GROUND-WATER LEVELS
CITY OF VIRGINIA BEACH

364920076093202. Local number, 61C 28 SOW 174B.

LOCATION.--Lat 36°49'20", long 76°09'32", Hydrologic Unit 02080208, at Kempsville High School in Virginia Beach.
Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 3 in., depth 80 ft, screened 65 to 75 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 9, 1985 to July 5, 1995, bimonthly measurement with chalked tape. Prior to Oct. 9, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, 1.2 ft above land-surface datum.

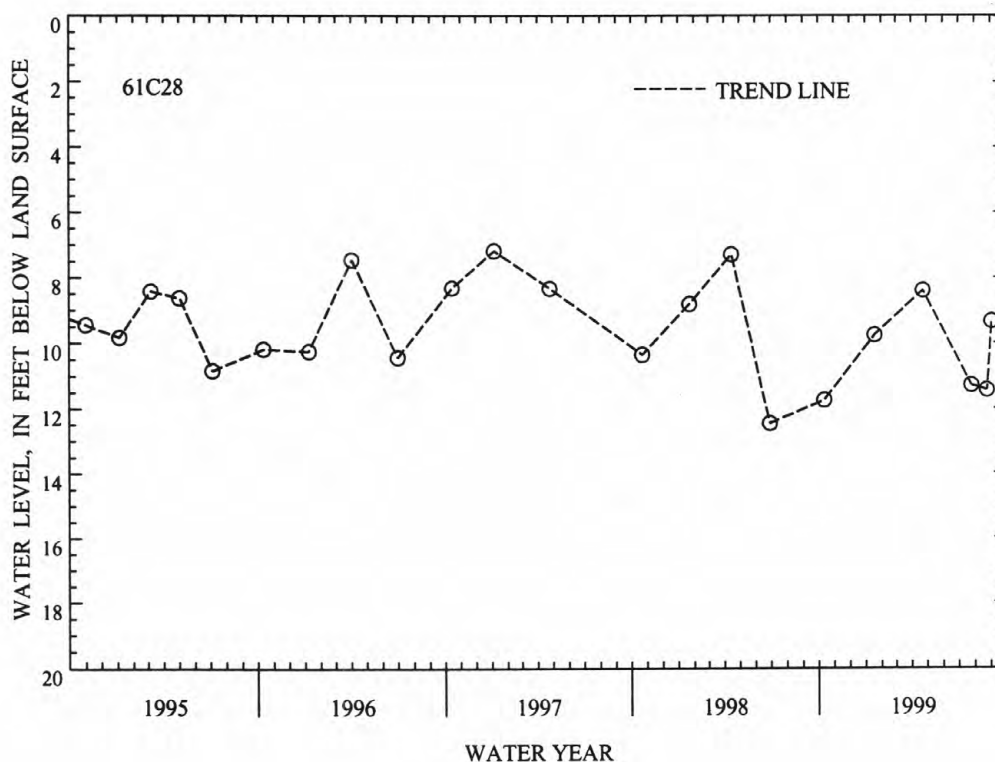
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--April 1984 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 6.51 ft below land-surface datum, Apr. 25, 1984; lowest measured, 17.99 ft below land-surface datum, July 18, 1986.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 13	11.74	JAN 19	9.75	APR 23	8.39	JUL 26	11.28	AUG 25	11.43	SEP 03	9.33
WATER YEAR 1999		HIGHEST	8.39	APR 23, 1999							
		LOWEST	11.74	OCT 13, 1998							



GROUND-WATER LEVELS

CITY OF VIRGINIA BEACH

365425076105001. Local number, 61D 5 SOW 155.

LOCATION.--Lat 36°54'25", long 76°10'50", Hydrologic Unit 02080108, 100 ft east of Ferry Road, 0.3 mi northwest of Diamond Springs Road in Virginia Beach. Owner: City of Virginia Beach.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 12 in. to 102 ft, diameter 6 in. from 102 to 150 ft, diameter 4 in. from 150 to 1,380 ft, depth 1,380 ft, screened 1,207 to 1,229 ft, 1,250 to 1,264 ft, 1,286 to 1,306 ft, 1,345 to 1,367 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 9, 1985, to July 5, 1995, bimonthly measurement with chalked tape. Prior to Oct. 9, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 11 ft above sea level, from topographic map. Measuring point: Top of casing, 2.8 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

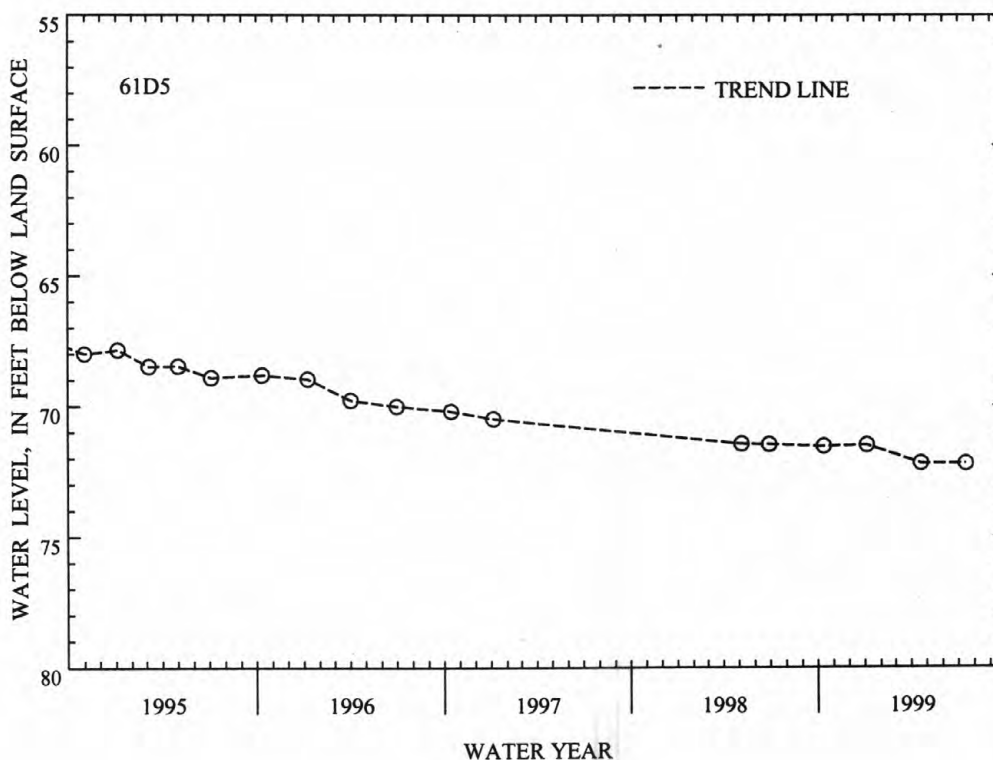
PERIOD OF RECORD.--December 1980 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 49.75 ft below land-surface datum, Dec. 17, 1980; lowest measured, 72.20 ft below land-surface datum, July 16, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 13	71.54	JAN 05	71.49	APR 20	72.19	JUL 16	72.20

WATER YEAR 1999	HIGHEST	71.49	JAN 05, 1999
	LOWEST	72.20	JUL 16, 1999



GROUND-WATER LEVELS
CITY OF VIRGINIA BEACH

363537076061001. Local number, 62A 2 SOW 097A.

LOCATION.--Lat 36°33'54", long 76°06'14", Hydrologic Unit 03010205, 0.2 mi south of Baum Road, 0.25 mi west of Craggs Causeway in Virginia Beach. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 76 ft, screened 66 to 76 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 9, 1985, to July 5, 1995, bimonthly measurement with chalked tape. Prior to Oct. 9, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 10 ft above sea level, from topographic map. Measuring point: Top of casing, 1.5 ft above land-surface datum prior to Aug. 3, 1988; at land-surface datum Aug. 3, 1988, to Mar. 13, 1989; 0.65 ft Mar. 13, 1989, to Apr. 1, 1991; 1.65 ft thereafter.

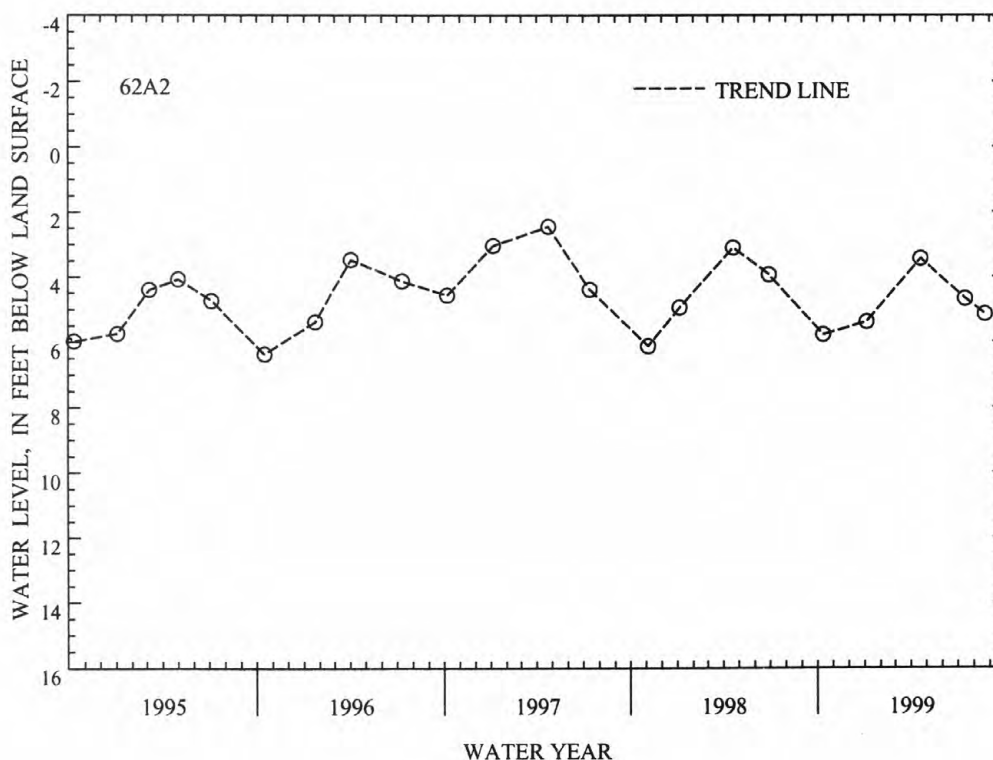
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--July 1979 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.18 ft below land-surface datum, Apr. 30, 1980; lowest measured, 6.68 ft below land-surface datum, Nov. 28, 1983.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 13	5.77	JAN 05	5.38	APR 20	3.44	JUL 16	4.67	AUG 23	5.14
WATER YEAR 1999		HIGHEST	3.44	APR 20, 1999					
		LOWEST	5.77	OCT 13, 1998					



GROUND-WATER LEVELS

CITY OF VIRGINIA BEACH

364126076003501. Local number, 62B 1 SOW 098A.

LOCATION.--Lat 36°41'26", long 76°00'35", Hydrologic Unit 03010205, on north side of Pleasant Ridge Road at the Virginia Beach Mosquito Control shop, 0.9 mi east of Pleasant Ridge in Virginia Beach. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 24 ft, screened 20 to 24 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 9, 1985, to July 5, 1995, bimonthly measurement with chalked tape. Prior to Oct. 9, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 10 ft above sea level, from topographic map. Measuring point: Top of casing, 0.8 ft above land-surface datum prior to Mar. 2, 1988; 1.05 ft thereafter.

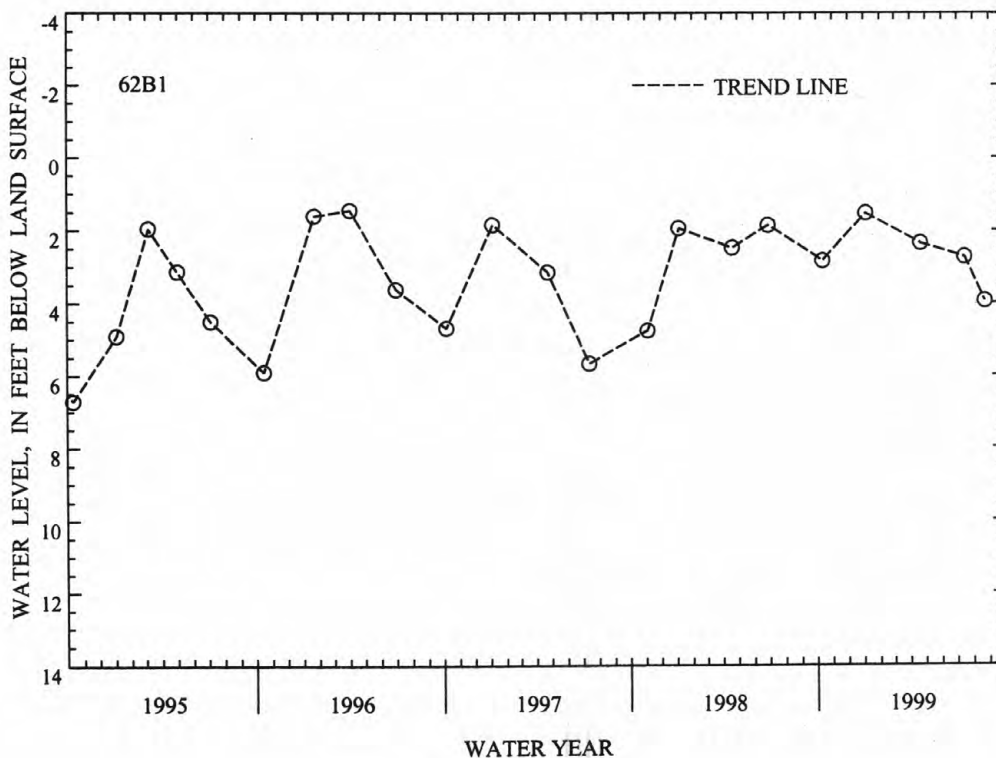
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--June 1979 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.02 ft below land-surface datum, Apr. 1, 1991; lowest measured, 11.95 ft below land-surface datum, Sept. 16, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 13	2.84	JAN 05	1.53	APR 20	2.35	JUL 16	2.73	AUG 24	3.94
WATER YEAR 1999		HIGHEST	1.53	JAN 05, 1999					
		LOWEST	3.94	AUG 24, 1999					



GROUND-WATER LEVELS

CITY OF VIRGINIA BEACH

364126076003502. Local number, 62B 2 SOW 098B.

LOCATION.--Lat 36°41'26", long 76°00'35", Hydrologic Unit 03010205, on north side of Pleasant Ridge Road at the Virginia Beach Mosquito Control shop, 0.9 mi east of Pleasant Ridge in Virginia Beach. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 98 ft, screened 88 to 98 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 9, 1985, to July 5, 1995, bimonthly measurement with chalked tape. Prior to Oct. 9, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 10 ft above sea level, from topographic map. Measuring point: Top of casing, 0.8 ft above land-surface datum prior to Mar. 2, 1988; 1.2 ft above land-surface datum Mar. 3, 1988, to Dec. 9, 1994; 0.8 ft thereafter.

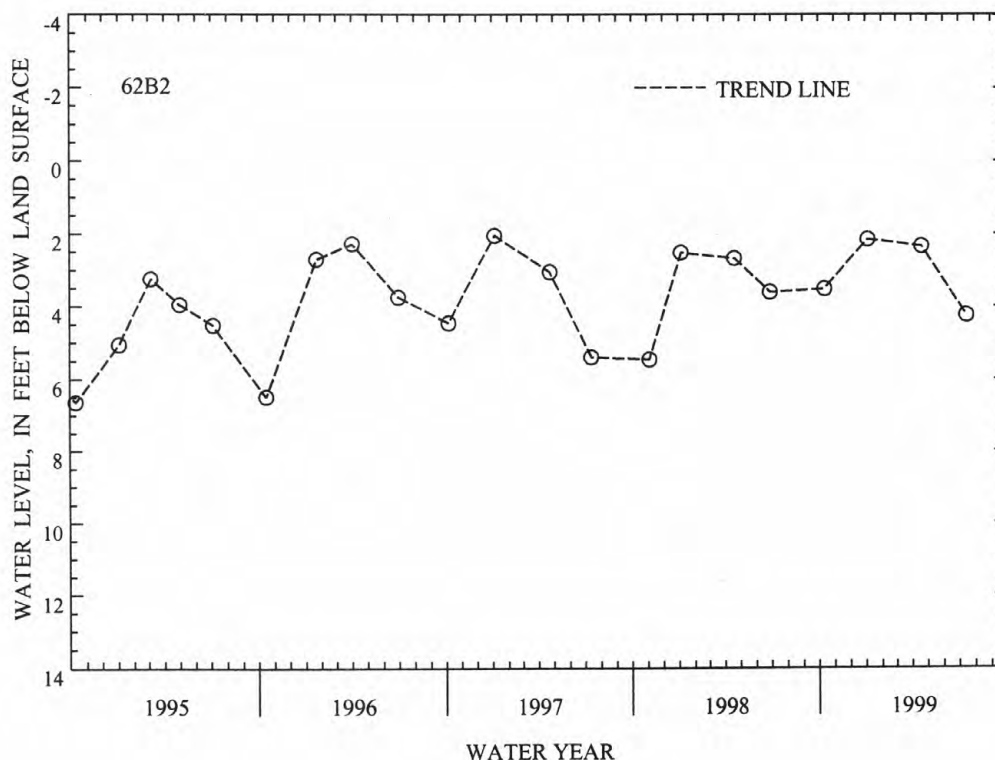
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--June 1979 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.70 ft below land-surface datum, Mar. 13, 1989, Jan. 10, 1990; lowest measured, 11.76 ft below land-surface datum, Sept. 16, 1980.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 13	3.52	JAN 05	2.15	APR 20	2.34	JUL 16	4.24
WATER YEAR 1999		HIGHEST	2.15	JAN 05, 1999			
		LOWEST	4.24	JUL 16, 1999			



GROUND-WATER LEVELS

CITY OF VIRGINIA BEACH

364713076030701. Local number, 62C 2 SOW 092A.

LOCATION.--Lat 36°47'15", long 76°03'08", Hydrologic Unit 03010205, at entrance to Oceana Naval Air Station on London Bridge Road in Virginia Beach. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 102 ft, screened 97 to 102 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 10, 1985, to July 5, 1995, bimonthly measurement with chalked tape. Prior to Oct. 10, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, 1.08 ft above land-surface datum prior to Mar. 2, 1988; 0.7 ft thereafter.

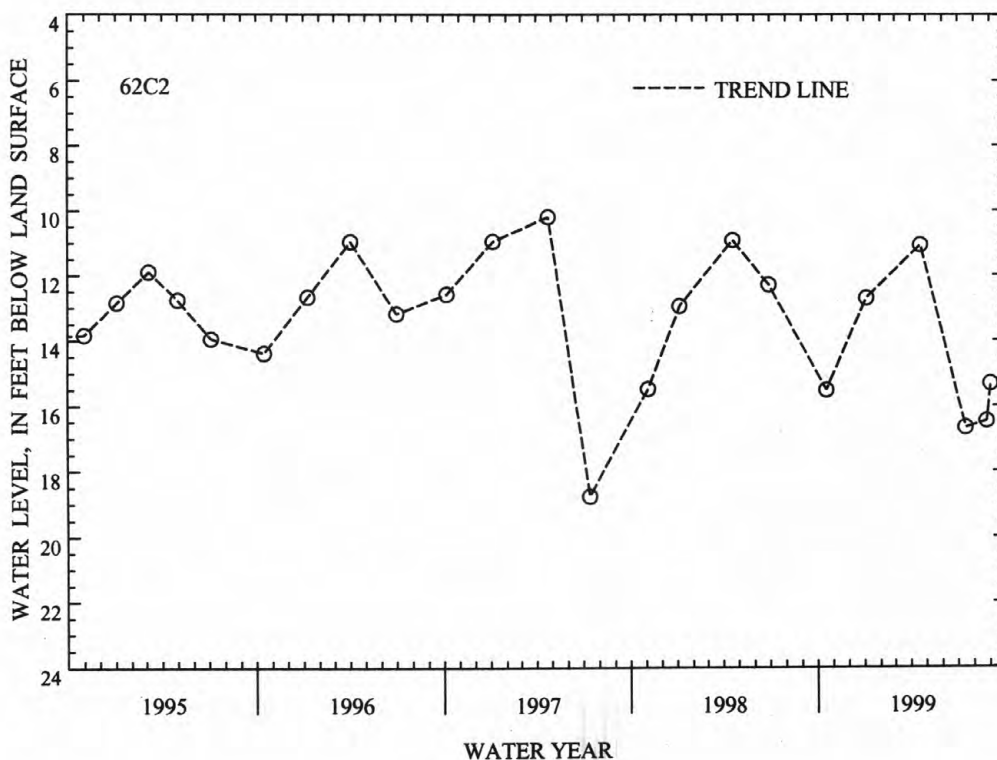
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--December 1977 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.00 ft below land-surface datum, Dec. 1, 1977; lowest measured, 18.75 ft below land-surface datum, July 14, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	15.51	JAN 05	12.70	APR 20	11.07	JUL 16	16.66	AUG 26	16.46	SEP 03	15.31
WATER YEAR 1999		HIGHEST	11.07	APR 20, 1999							
		LOWEST	16.66	JUL 16, 1999							



GROUND-WATER LEVELS
CITY OF VIRGINIA BEACH

364715076030801. Local number, 62C 3 SOW 092B.

LOCATION.--Lat 36°47'15", long 76°03'08", Hydrologic Unit 03010205, at entrance to Oceana Naval Air Station on London Bridge Road in Virginia Beach. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4 in., depth 58 ft, screened 53 to 58 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 10, 1985, to July 5, 1995, bimonthly measurement with chalked tape. Prior to Oct. 10, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 15 ft above sea level, from topographic map. Measuring point: Top of casing, 1.05 ft above land-surface datum prior to Mar. 2, 1988; 0.9 ft thereafter.

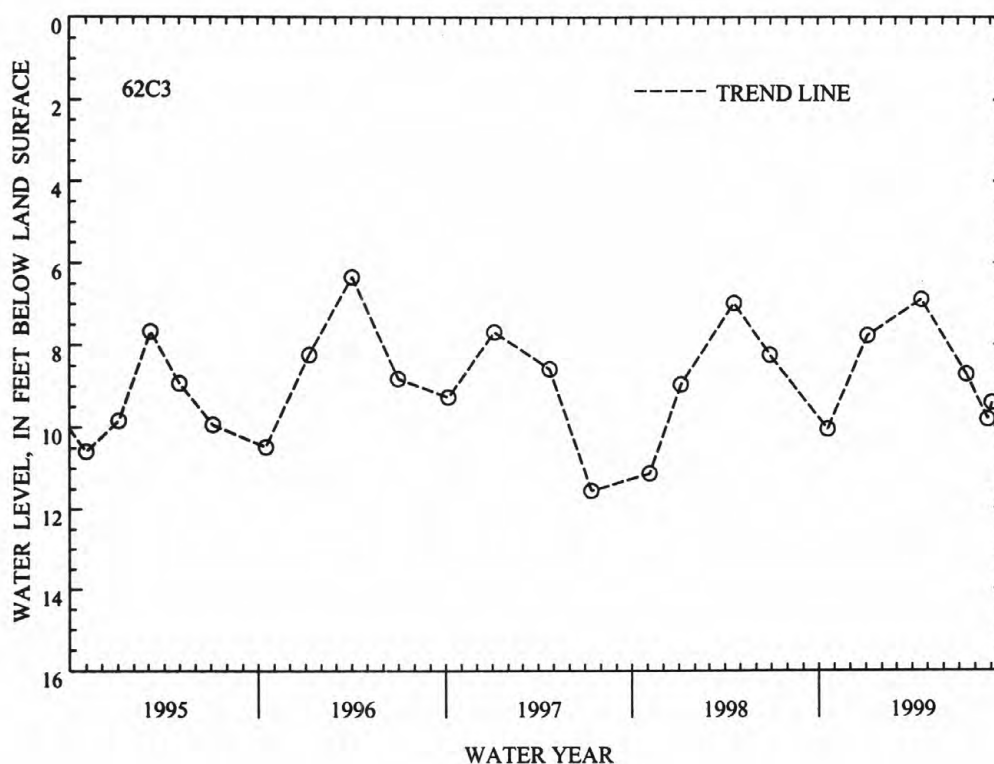
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--February 1978 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.36 ft below land-surface datum, Feb. 16, 1983; lowest measured, 11.55 ft below land-surface datum, July 14, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	10.05	JAN 05	7.77	APR 20	6.89	JUL 16	8.71	AUG 26	9.81	SEP 03	9.41
WATER YEAR 1999		HIGHEST	6.89	APR 20, 1999							
		LOWEST	10.05	OCT 19, 1998							



GROUND-WATER LEVELS

CITY OF VIRGINIA BEACH

364745076004302. Local number, 62C 10 SOW 172B.

LOCATION.--Lat 36°47'45", long 76°00'43", Hydrologic Unit 03010205, at the end of Phantom Boulevard, 0.25 mi south of Harpers Road and Oceana Naval Air Station in Virginia Beach. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 3 in., depth 280 ft, screened 270 to 280 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 10, 1985, to July 5, 1995, bimonthly measurement with chalked tape. Prior to Oct. 10, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 17 ft above sea level, from topographic map. Measuring point: Top of casing, 2.8 ft above land-surface datum.

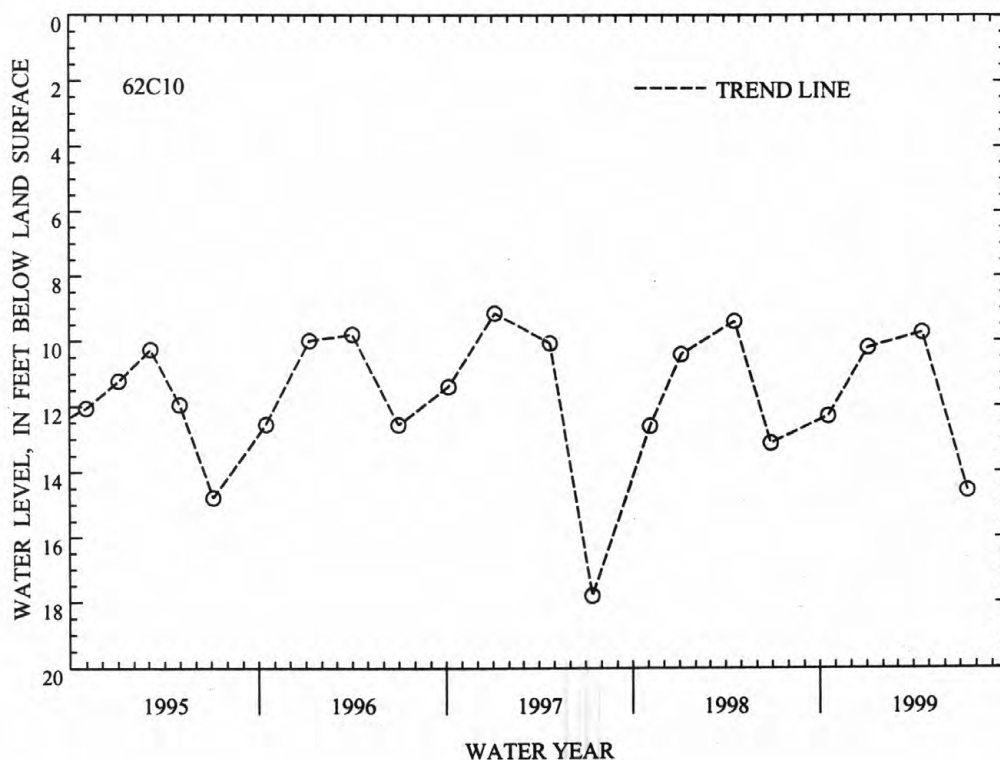
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--April 1984 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.10 ft below land-surface datum, Jan. 30, 1991; lowest measured, 17.80 ft below land-surface datum, July 14, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	12.30	JAN 05	10.20	APR 20	9.74	JUL 16	14.57
WATER YEAR 1999		HIGHEST	9.74	APR 20, 1999			
		LOWEST	14.57	JUL 16, 1999			



GROUND-WATER LEVELS

CITY OF VIRGINIA BEACH

364745076004303. Local number, 62C 11 SOW 172C.

LOCATION.--Lat 36°47'45", long 76°00'43", Hydrologic Unit 03010205, at the end of Phantom Boulevard, 0.25 mi south of Harpers Road and Oceana Naval Air Station in Virginia Beach. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 3 in., depth 35 ft, screened 20 to 30 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 10, 1985, to July 5, 1995, bimonthly measurement with chalked tape. Prior to Oct. 10, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 17 ft above sea level, from topographic map. Measuring point: Top of casing, 1.7 ft above land-surface datum.

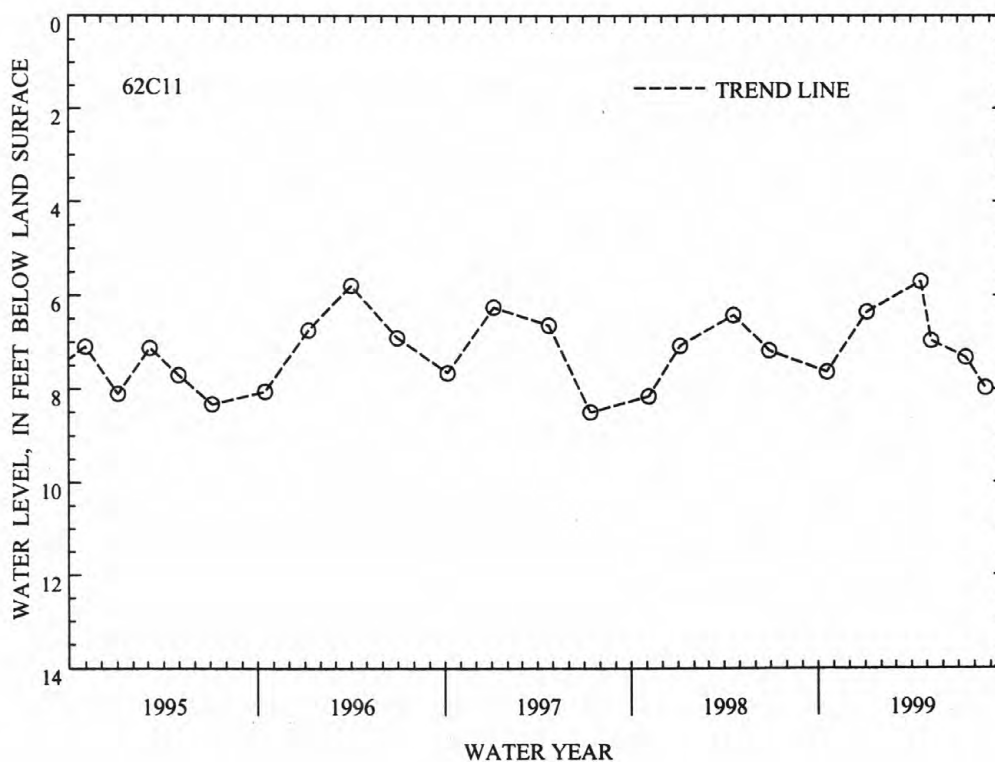
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--May 1984 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.89 ft below land-surface datum, Feb. 28, 1985; lowest measured, 8.49 ft below land-surface datum, July 14, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	7.63	JAN 05	6.35	APR 20	5.70	MAY 10	6.96	JUL 16	7.32	AUG 23	7.97
WATER YEAR 1999		HIGHEST	5.70	APR 20, 1999							
		LOWEST	7.97	AUG 23, 1999							



GROUND-WATER LEVELS

CITY OF VIRGINIA BEACH

364722075591801. Local number, 63C 4 SOW 173A.

LOCATION.--Lat 36°47'22", long 75°59'18", Hydrologic Unit 02080108, at Redwing Park, 0.7 mi northeast of intersection of Oceana Boulevard and Dam Neck Road in Virginia Beach. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 3 in., depth 291 ft, screened 281 to 291 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 10, 1985, to July 5, 1995, bimonthly measurement with chalked tape. Prior to Oct. 10, 1985, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 8 ft above sea level, from topographic map. Measuring point: Top of casing, 0.8 ft above land-surface datum.

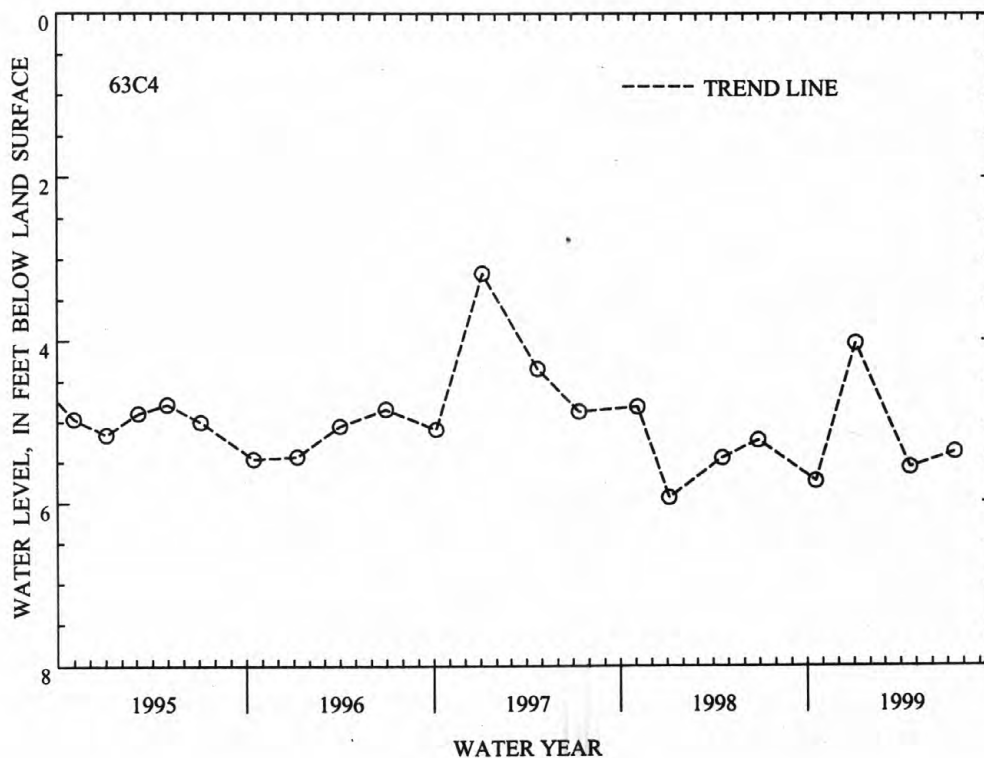
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--April 1984 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 3.10 ft below land-surface datum, June 21, 1989; lowest measured, 5.94 ft below land-surface datum, Jan. 6, 1998.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 19	5.74	JAN 05	4.03	APR 20	5.57	JUL 16	5.38
WATER YEAR 1999	HIGHEST	4.03	JAN 05, 1999				
	LOWEST	5.74	OCT 19, 1998				



GROUND-WATER LEVELS

WESTMORELAND COUNTY

381110076550501. Local number, 55P 5.

LOCATION.--Lat 38°11'10", long 76°55'05", Hydrologic Unit 02070011, behind craft shop at George Washington Birthplace National Monument, 3.8 mi southeast of Colonial Beach. Owner: National Park Service.

AQUIFER.--Middle Potomac aquifer of Cretaceous age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 6 in., depth 471 ft, screened 451 to 466 ft.

INSTRUMENTATION.--Digital recorder--60-minute punch. Prior to Apr. 24, 1979, continuous strip-chart recorder.

DATUM.--Elevation of land-surface datum is 24 ft above sea level, from topographic map. Measuring point: Top of recorder shelf, 3.0 ft above land-surface datum.

REMARKS.--Missing record due to recorder malfunction. Water level affected by local pumpage and regional drawdown.

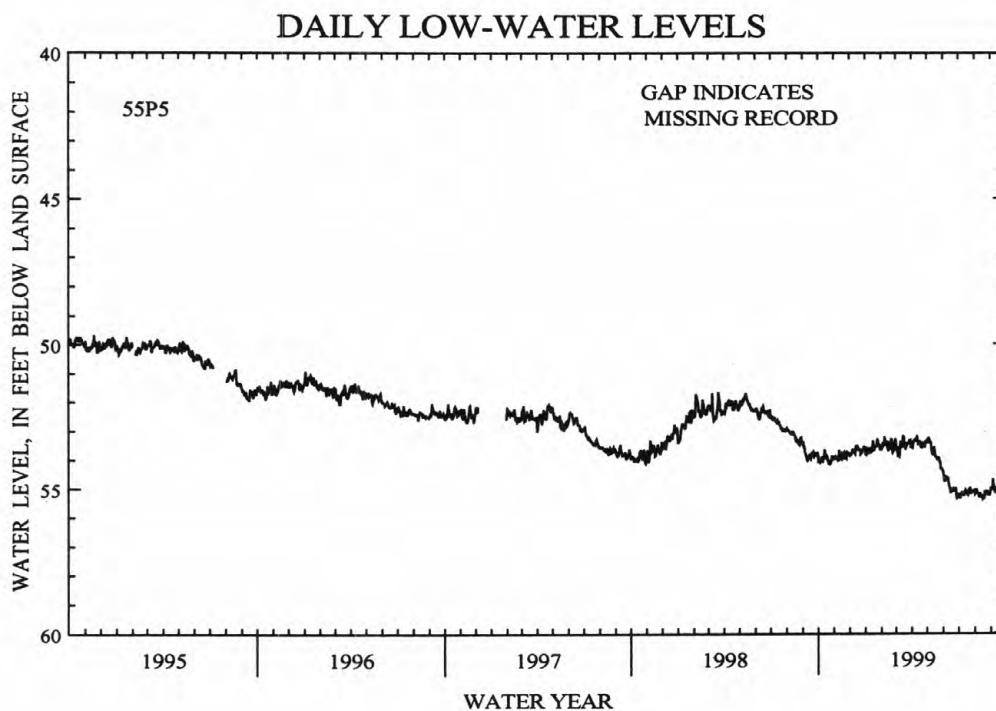
PERIOD OF RECORD.--June 1974 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 25.05 ft below land-surface datum, June 24, 1974; lowest recorded, 55.38 ft below land-surface datum, June 27, Aug. 16, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999
LOWEST DAILY VALUES

DAY	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP
5	54.12	53.93	53.81	53.74	53.53	53.89	53.40	53.34	54.69	55.28	55.07	54.69
10	54.00	53.89	53.69	53.71	53.49	53.39	53.28	53.78	54.64	55.21	55.27	55.06
15	53.86	53.83	53.55	53.37	53.68	53.22	53.45	53.65	55.15	55.10	55.31	55.10
20	54.04	53.78	53.69	53.56	53.30	53.63	53.60	54.01	55.05	55.18	55.18	54.95
25	54.09	53.96	53.78	53.46	53.61	53.48	53.56	54.11	54.99	55.18	55.15	55.07
EOM	54.00	53.81	53.68	53.57	53.29	53.61	53.41	54.40	55.27	55.08	55.14	54.92

WATER YEAR 1999 HIGHEST INSTANTANEOUS 52.78 APR 11, 1999
 LOWEST INSTANTANEOUS 55.38 JUN 27, AUG 16, 1999



GROUND-WATER LEVELS

WESTMORELAND COUNTY

381132076551001. Local number, 55P 9.

LOCATION.--Lat 38°11'32", long 76°55'10", Hydrologic Unit 02070011, at George Washington Birthplace National Monument, 500 ft east of park road, 0.6 mi north of the end of State Highway 204, and 3.4 mi southeast of Colonial Beach. Owner: National Park Service.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Dug unused water well, diameter 36 in., depth 22.6 ft.

INSTRUMENTATION.--Monthly measurement with chalked tape by USGS personnel.

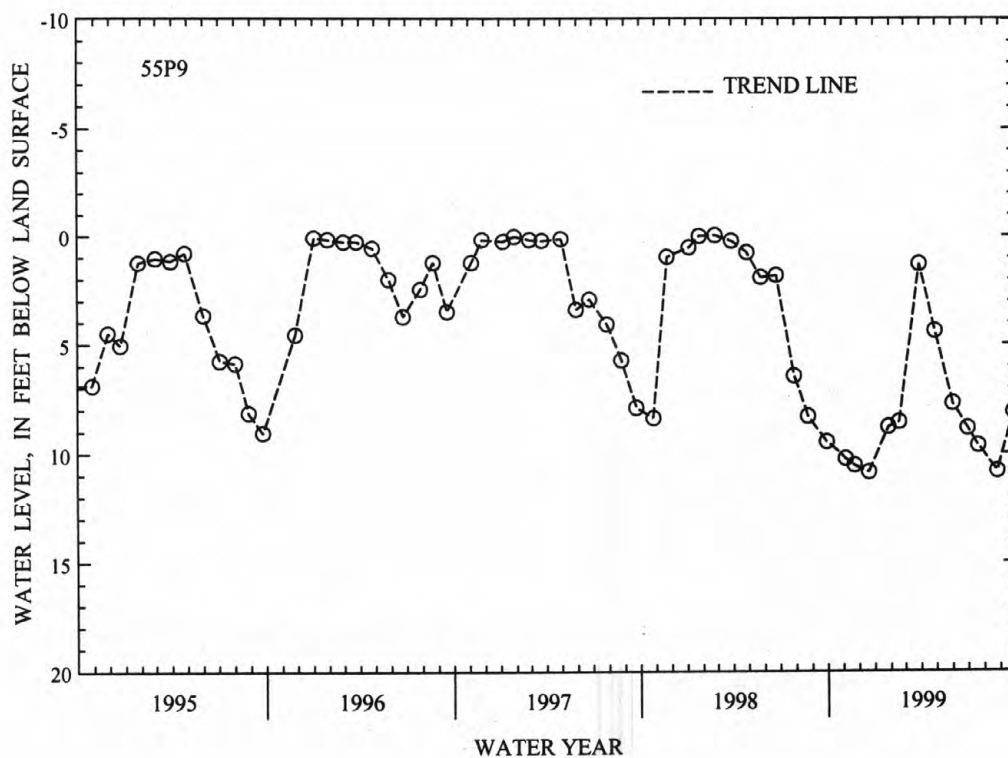
DATUM.--Elevation of land-surface datum is 17 ft above sea level, from topographic map. Measuring point: Top of concrete hatch on well casing, 2.25 ft above land-surface datum. Prior to July 3, 1995, top of concrete lip on casing, 1.65 ft above land-surface datum.

PERIOD OF RECORD.--July 1977 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.13 ft above land-surface datum, Feb. 24, 1994; lowest measured, 12.80 ft below land-surface datum, Dec. 27, 1988.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
NOV 06	10.23	DEC 21	10.85	FEB 18	8.55	APR 29	4.39	JUL 01	8.83	AUG 27	10.80
23	10.53	JAN 28	8.77	MAR 30	1.30	JUN 02	7.70	JUL 21	9.60	SEP 28	8.09
WATER YEAR 1999		HIGHEST	1.30	MAR 30, 1999							
		LOWEST	10.85	DEC 21, 1998							



GROUND-WATER LEVELS

WESTMORELAND COUNTY

380538076490801. Local number, 56N 1 SOW 016.

LOCATION.--Lat 38°05'38", long 76°49'08", Hydrologic Unit 02080104, at Washington and Lee School, 0.5 mi east of Montross. Owner: Westmoreland County Public Schools.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 4 in. to 189 ft, diameter 2 in. from 189 to 641 ft, depth 641 ft, screened 608 to 628 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 3, 1985, to July 11, 1995, bimonthly measurement with chalked tape. Mar. 31, 1979, to Oct. 2, 1985, occasional measurement with chalked tape. Prior to Mar. 31, 1979, continuous strip-chart recorder.

DATUM.--Elevation of land-surface datum is 149 ft above sea level, from topographic map. Measuring point: Top of casing, 1.0 ft above land-surface datum.

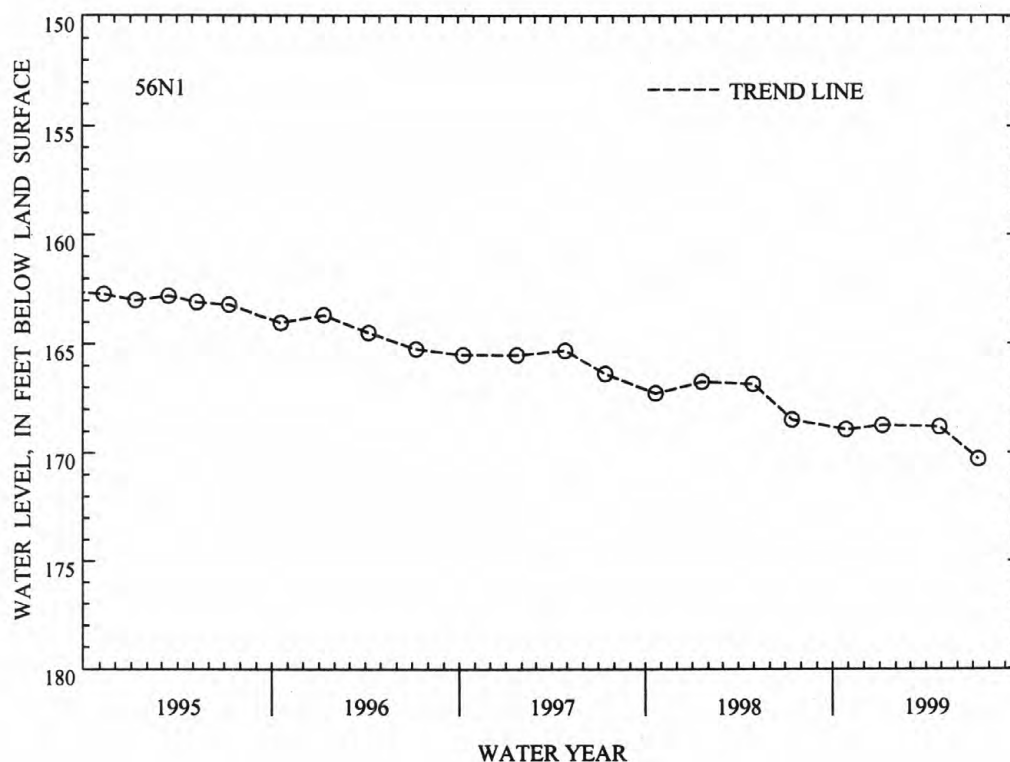
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. Water level affected by regional drawdown.

PERIOD OF RECORD.--August 1967 to current year.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 133.47 ft below land-surface datum, Aug. 28, 1967; lowest measured, 170.29 ft below land-surface datum, July 12, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 28	168.93	JAN 07	168.74	APR 28	168.81	JUL 12	170.29
WATER YEAR 1999	HIGHEST	168.74	JAN 07, 1999				
	LOWEST	170.29	JUL 12, 1999				



GROUND-WATER LEVELS

YORK COUNTY

371654076401601. Local number, 57G 17 SOW 068.

LOCATION.--Lat 37°16'54", long 76°40'16", Hydrologic Unit 02080107, 250 ft east of State Highway 716 at Parkway Estates, 0.5 mi east of Williamsburg. Owner: Sydnor Hydrodynamics.

AQUIFER.--Brightseat-upper Potomac aquifer of Cretaceous-Paleocene age and Aquia aquifer of Paleocene age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 8 in., depth 452.3 ft, screened 411 to 426 ft, 442.2 to 452.3 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 1, 1985, to July 7, 1995, bimonthly measurement with chalked tape. Apr. 30, 1978, to Sept. 30, 1985, occasional measurement with chalked tape. Jan. 15, 1974, to Apr. 30, 1978, continuous strip-chart recorder. Prior to Jan. 15, 1974, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 60 ft above sea level, from topographic map. Measuring point: Top of casing, 0.85 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l. Water level affected by regional draw-down.

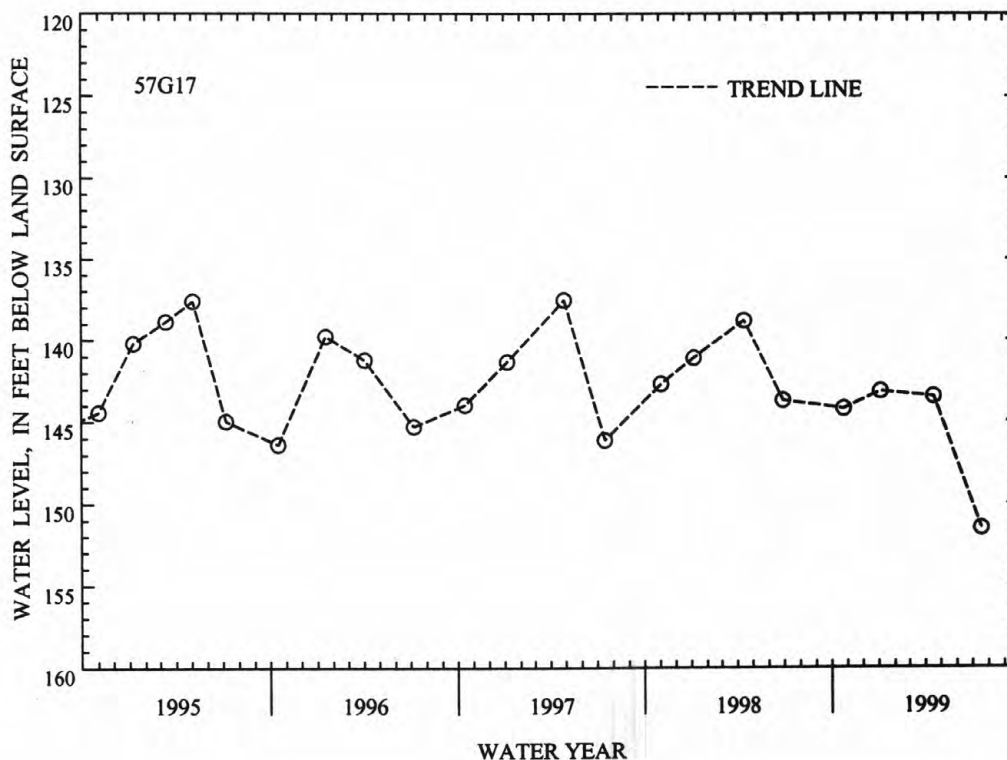
PERIOD OF RECORD.--November 1972 to current year. Unpublished records available prior to October 1985 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 106.09 ft below land-surface datum, Nov. 22, 1972; lowest measured, 151.51 ft below land-surface datum, July 19, 1999.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	144.19	JAN 06	143.13	APR 19	143.45	JUL 19	151.51

WATER YEAR 1999	HIGHEST	143.13	JAN 06, 1999
	LOWEST	151.51	JUL 19, 1999



GROUND-WATER LEVELS

YORK COUNTY

371045076310702. Local number, 58F 62 SOW 187A.

LOCATION.--Lat 37°10'45", long 76°31'07", Hydrologic Unit 02080206, 300 ft north of State Highway 105, 1.8 mi east of intersection of State Highways 105 and 143, and 3.1 mi southeast of Lee Hall. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Eastover-Calvert confining unit of Miocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 140 ft, screened 120 to 140 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 4, 1991, to July 10, 1995, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to Sept. 4, 1991, occasional measurement with chalked tape by USGS and Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 55 ft above sea level, from topographic map. Measuring point: Top of casing, 1.5 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

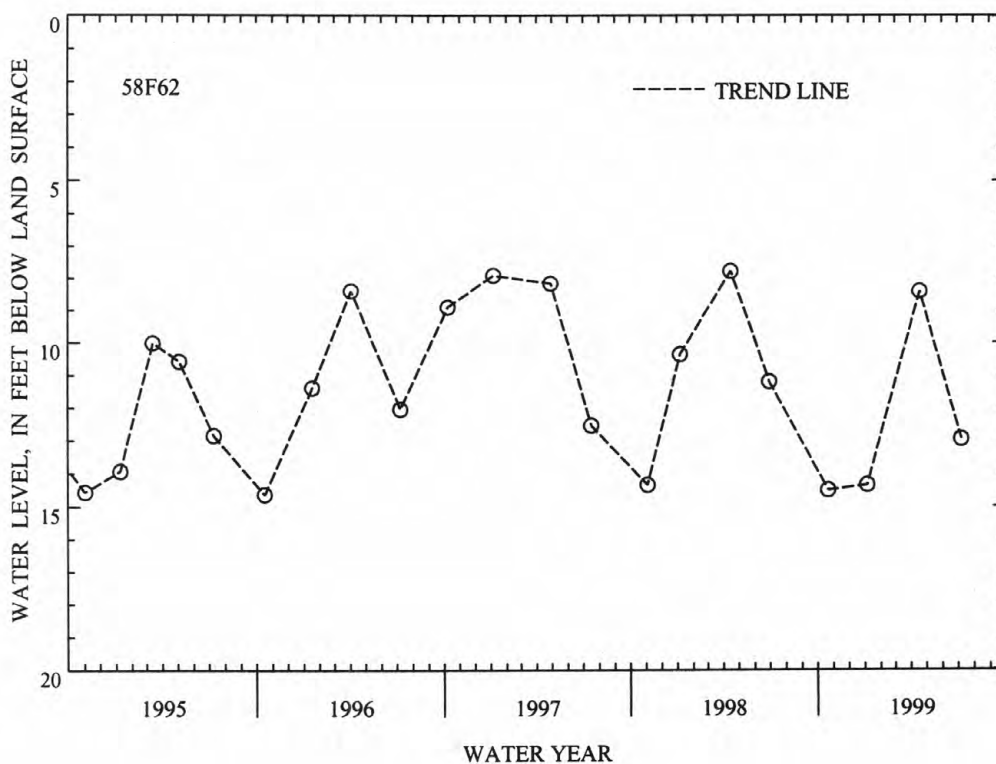
PERIOD OF RECORD.--September 1990 to current year. Unpublished records available in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 7.08 ft below land-surface datum, Apr. 6, 1994; lowest measured, 14.83 ft below land-surface datum, Nov. 6, 1991.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	14.50	JAN 06	14.34	APR 19	8.40	JUL 08	12.95

WATER YEAR 1999	HIGHEST	8.40	APR 19, 1999
	LOWEST	14.50	OCT 22, 1998



GROUND-WATER LEVELS

YORK COUNTY

371045076310703. Local number, 58F 63 SOW 187B.

LOCATION.--Lat 37°10'45", long 76°31'07", Hydrologic Unit 02080206, 300 ft north of State Highway 105, 1.8 mi east of intersection of State Highways 105 and 143, and 3.1 mi southeast of Lee Hall. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Cornwallis Cave aquifer of Pliocene-Holocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 28 ft, screened 18 to 28 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 4, 1991, to July 10, 1995, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to Sept. 4, 1991, occasional measurement with chalked tape by USGS and Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 55 ft above sea level, from topographic map. Measuring point: Top of casing, 1.6 ft above land-surface datum.

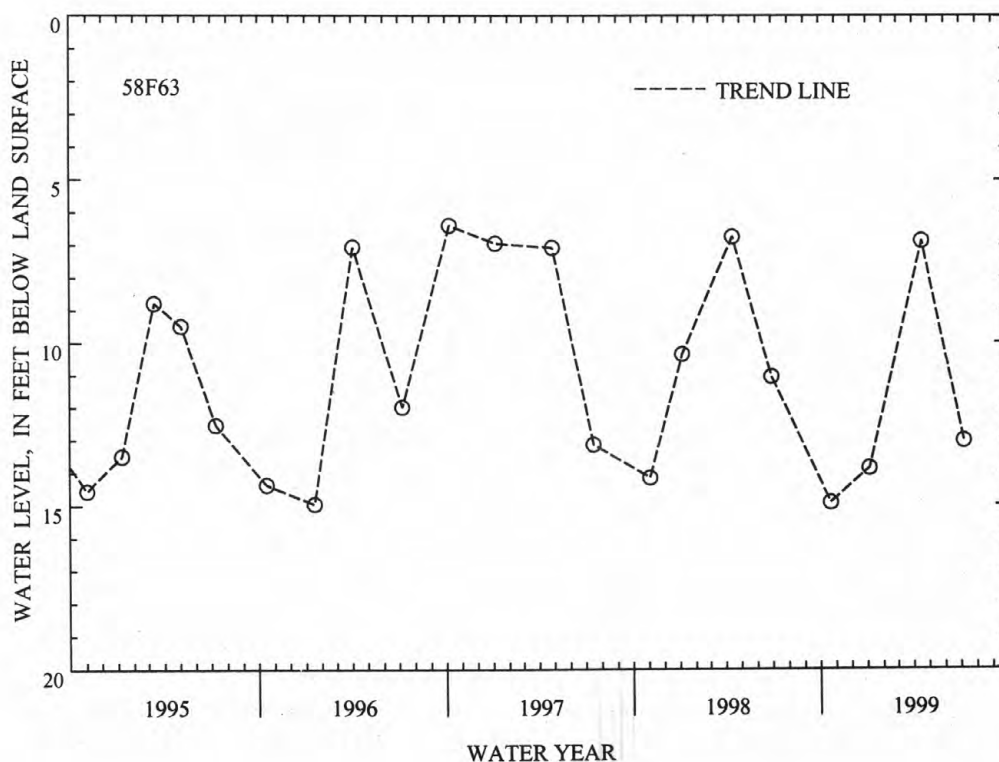
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--September 1990 to current year. Unpublished records available in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 5.94 ft below land-surface datum, Apr. 6, 1994; lowest measured, 14.95 ft below land-surface datum, Jan. 18, 1996.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 22	14.92	JAN 06	13.86	APR 19	6.87	JUL 08	13.03
WATER YEAR 1999		HIGHEST	6.87	APR 19, 1999			
		LOWEST	14.92	OCT 22, 1998			



GROUND-WATER LEVELS

YORK COUNTY

371250076300502. Local number, 58F 65 SOW 191A.

LOCATION.--Lat 37°12'05", long 76°30'05", Hydrologic Unit 02080107, 300 ft east of State Highway 704, 1.2 mi north of intersection of State Highway 704 and U.S. Highway 17, and 1.5 mi south of Yorktown. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 110 ft, screened 90 to 110 ft.

INSTRUMENTATION.--Occasional measurement with chalked taped by Virginia Department of Environmental Quality - Water Division personnel. May 7, 1991 to Oct. 17, 1995, continuous strip-chart recorder since May 7, 1991. Occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 55 ft above sea level, from topographic map. Measuring point: Top of casing, 1.8 ft above land-surface datum prior to May 7, 1991; 1.70 ft thereafter.

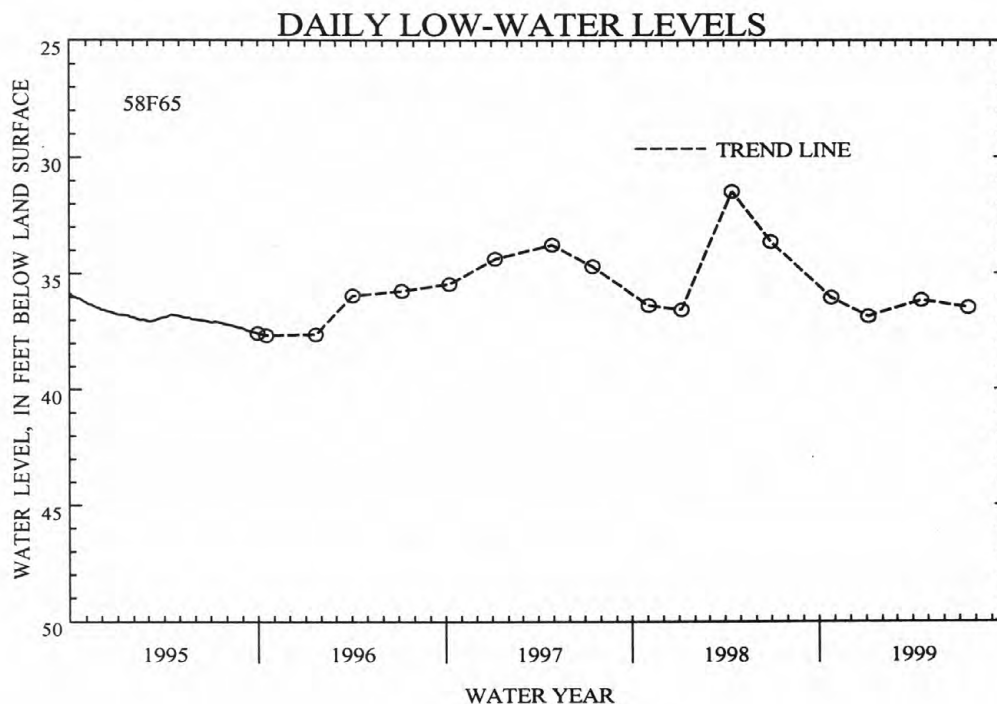
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--November 1990 to current year. Unpublished records available in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 31.47 ft below land-surface datum, Apr. 16, 1998; lowest recorded, 38.38 ft below land-surface datum, Mar. 13, 1992.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	36.03	JAN 06	36.84	APR 19	36.14	JUL 19	36.46
WATER YEAR 1999	HIGHEST	36.03	OCT 26, 1998				
	LOWEST	36.84	JAN 06, 1999				



GROUND-WATER LEVELS

YORK COUNTY

371535076373501. Local number, 59F 1 SOW 027.

LOCATION.--Lat 37°13'04", long 76°29'19", Hydrologic Unit 02080107, at U.S. Naval Supply Center, 1.6 mi southeast of Yorktown. Owner: U.S. Naval Supply Center.

AQUIFER.--Chickahominy-Piney Point aquifer of Eocene-Oligocene age.

WELL CHARACTERISTICS.--Drilled unused water well, diameter 10 in., depth 446 ft, screened 421 to 446 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Oct. 11, 1985, to July 7, 1995, bimonthly measurement with chalked tape. Sept. 10, 1971, to Oct. 10, 1985, occasional measurement with chalked tape. Apr. 10, 1970, to Sept. 10, 1971, continuous strip-chart recorder. Prior to Apr. 10, 1970, occasional measurement with chalked tape.

DATUM.--Elevation of land-surface datum is 50 ft above sea level, from topographic map. Measuring point: Top of casing, 2.8 ft above land-surface datum.

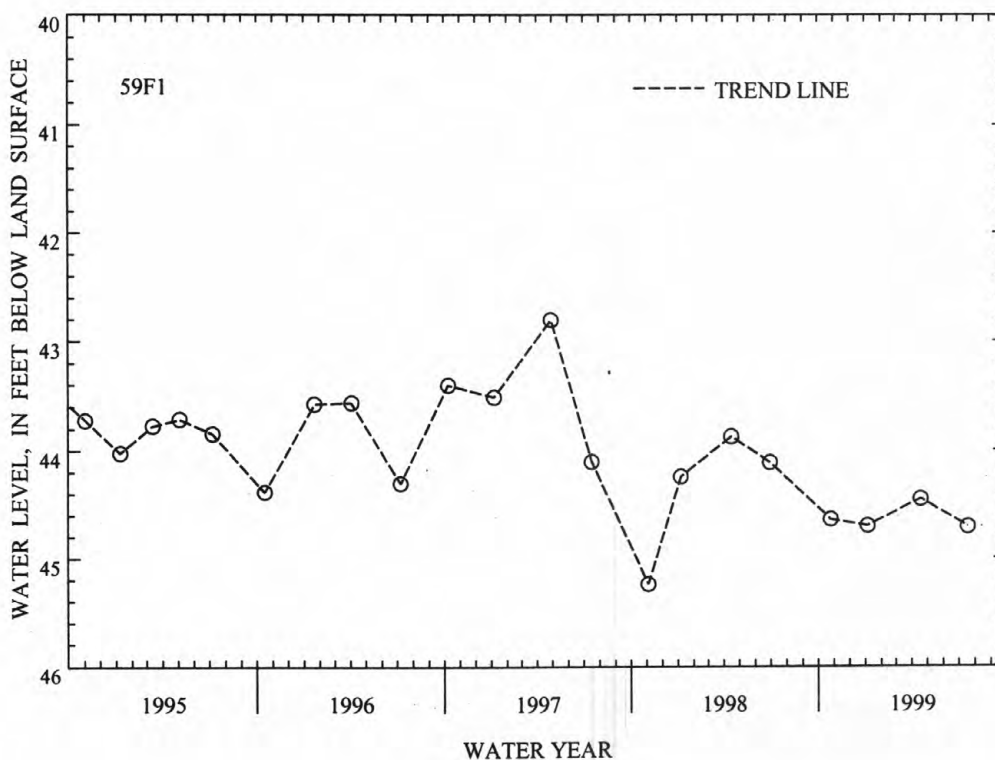
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

PERIOD OF RECORD.--October 1969 to current year. Unpublished records available prior to October 1987 in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 40.00 ft below land-surface datum, Oct. 27, 1969; lowest measured, 45.24 ft below land-surface datum, Nov. 4, 1997.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	44.64	JAN 06	44.70	APR 19	44.45	JUL 19	44.71
WATER YEAR 1999		HIGHEST	44.45	APR 19, 1999			
		LOWEST	44.71	JUL 19, 1999			



GROUND-WATER LEVELS

YORK COUNTY

370841076275202. Local number, 59F 72 SOW 184A.

LOCATION.--Lat 37°08'41", long 76°27'52", Hydrologic Unit 02080108, 800 ft south of State Highway 620, 0.4 mi southwest of intersection of State Highway 620 and U.S. Highway 17, and 2.2 mi southwest of Dare. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in. to 98 ft, diameter 3.5 in. from 98 to 131 ft, depth 131 ft, screened 121 to 131 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 12, 1991, to July 7, 1995, bimonthly measurement with chalked tape. Prior to Sept. 12, 1991, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 42 ft above sea level, from topographic map. Measuring point: Top of recorder shelf, 2.8 ft above land-surface datum prior to Nov. 6, 1991; top of casing, 1.80 ft thereafter.

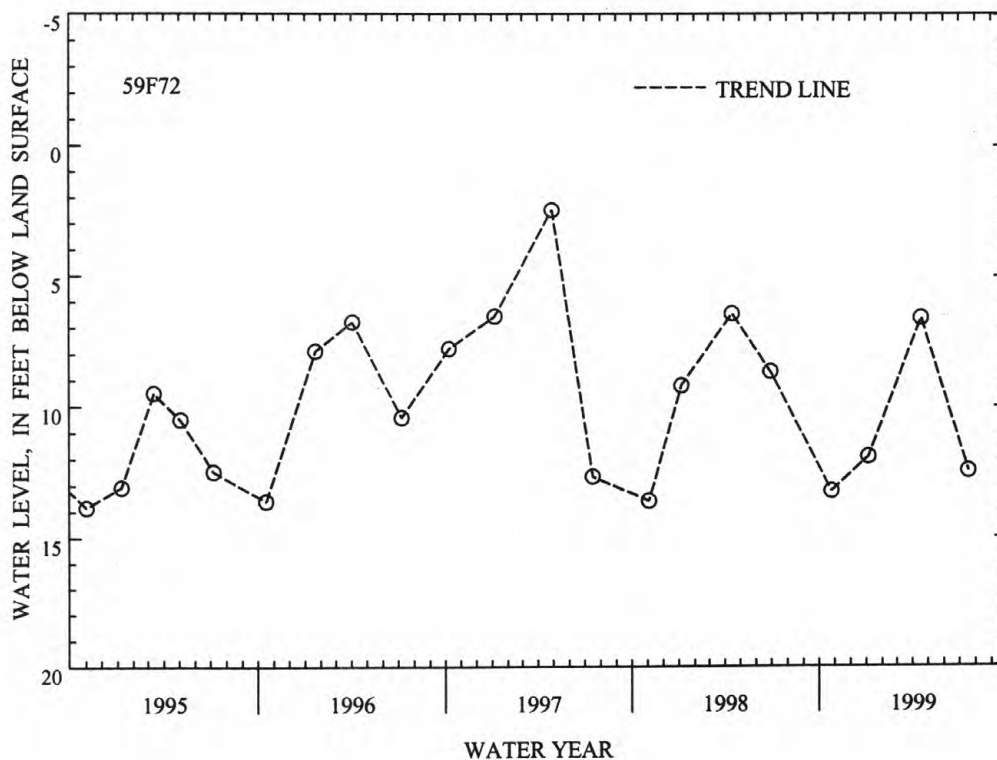
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--July 1990 to current year. Unpublished records available in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 2.46 ft below land-surface datum, Apr. 29, 1997; lowest recorded, 13.99 ft below land-surface datum, Nov. 27, 30, Dec. 1, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	13.22	JAN 06	11.91	APR 19	6.60	JUL 19	12.45
WATER YEAR 1999	HIGHEST	6.60	APR 19, 1999				
	LOWEST	13.22	OCT 26, 1998				



GROUND-WATER LEVELS

YORK COUNTY

370841076275203. Local number, 59F 73 SOW 184B.

LOCATION.--Lat 37°08'41", long 76°27'52", Hydrologic Unit 02080108, 800 ft south of State Highway 620, 0.4 mi southwest of intersection of State Highway 620 and U.S. Highway 17, and 2.2 mi southwest of Dare. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Cornwallis Cave aquifer of Pliocene-Holocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in. to 39 ft, diameter 2.0 in. from 39 to 60 ft, depth 60 ft, screened 50 to 60 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 4, 1991, to July 7, 1995, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to Sept. 4, 1991, occasional measurement with chalked tape by USGS and Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 42 ft above sea level, from topographic map. Measuring point: Top of casing, 1.7 ft above land-surface datum.

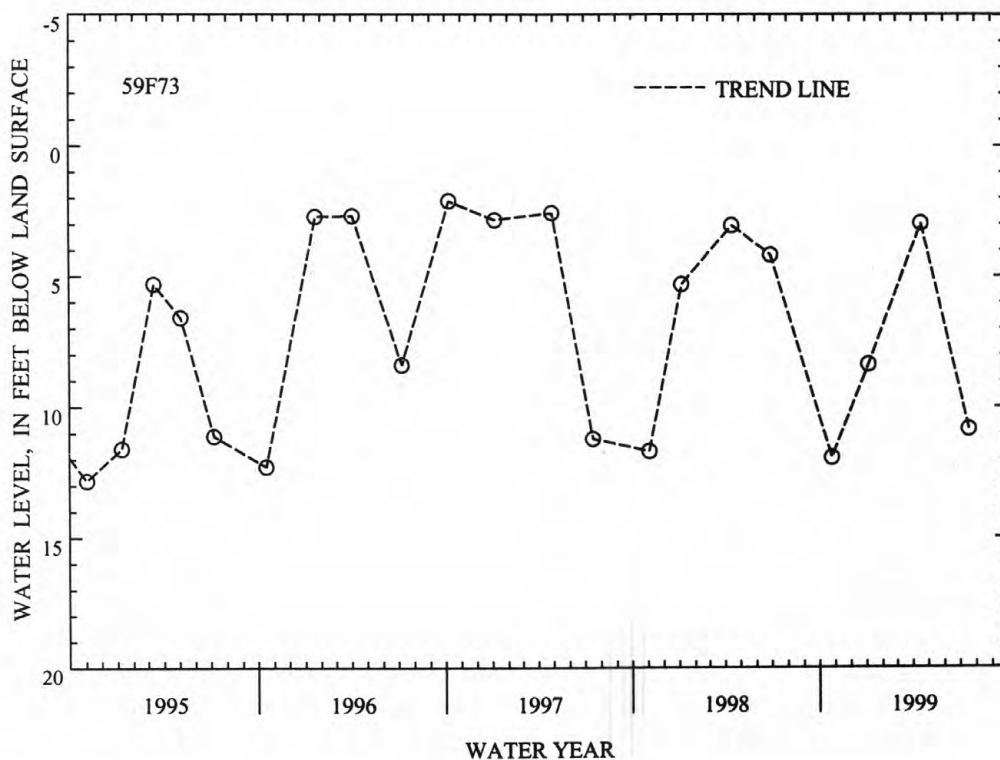
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--July 1990 to current year. Unpublished records available in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 2.03 ft below land-surface datum, Feb. 15, 1994; lowest measured, 12.81 ft below land-surface datum, Nov. 2, 1994.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	11.93	JAN 06	8.37	APR 19	2.97	JUL 19	10.84
WATER YEAR 1999	HIGHEST	2.97	APR 19, 1999				
	LOWEST	11.93	OCT 26, 1998				



GROUND-WATER LEVELS

YORK COUNTY

370841076275204. Local number, 59F 74 SOW 184C.

LOCATION.--Lat 37°08'41", long 76°27'52", Hydrologic Unit 02080108, 800 ft south of State Highway 620, 0.4 mi southwest of intersection of State Highway 620 and U.S. Highway 17, and 2.2 mi southwest of Dare. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 20 ft, screened 10 to 20 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 12, 1991, to July 7, 1995, bimonthly measurement with chalked tape. Prior to Sept. 12, 1991, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 42 ft above sea level, from topographic map. Measuring point: Top of recorder shelf, 2.8 ft above land-surface datum prior to Nov. 6, 1991; top of casing, 1.80 ft thereafter.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

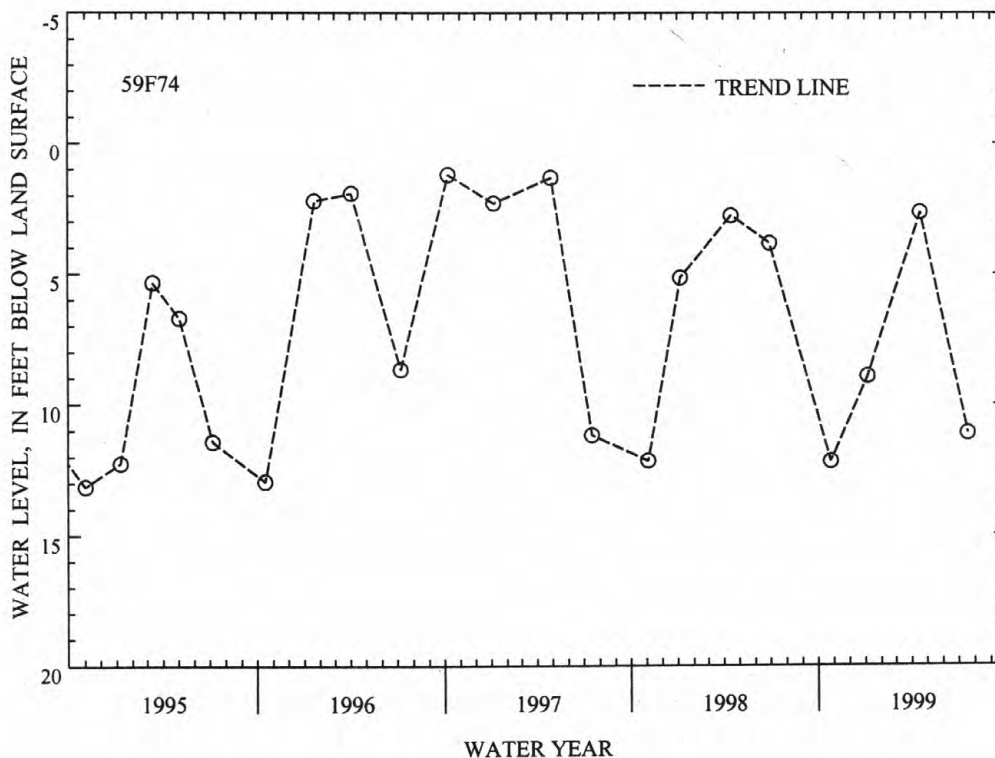
PERIOD OF RECORD.--July 1990 to current year. Unpublished records available in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level recorded, 1.19 ft below land-surface datum, Oct. 9, 1996; lowest recorded, 13.20 ft below land-surface datum, Dec. 14, 15, 20, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	12.17	JAN 06	8.91	APR 19	2.63	JUL 19	11.09

WATER YEAR 1999	HIGHEST	2.63	APR 19, 1999
	LOWEST	12.17	OCT 26, 1998



GROUND-WATER LEVELS

YORK COUNTY

370934076251402. Local number, 59F 76 SOW 185A.

LOCATION.--Lat 37°09'34", long 76°25'14", Hydrologic Unit 02080108, 300 ft west of Kings Grant Road, 0.2 mi south of intersection of Kings Grant Road and State Highway 621, and 1.2 mi southeast of Dare. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 120 ft, screened 100 to 120 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 3, 1991, to July 7, 1995, bimonthly measurement with chalked tape. Prior to Sept. 3, 1991, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 9.79 ft above sea level. Measuring point: Top of recorder shelf, 3.0 ft above land-surface datum prior to Nov. 6, 1991; top of casing, 1.80 ft thereafter. Readings from July 1990 to August 1991 should be 3.0 ft lower than previously published.

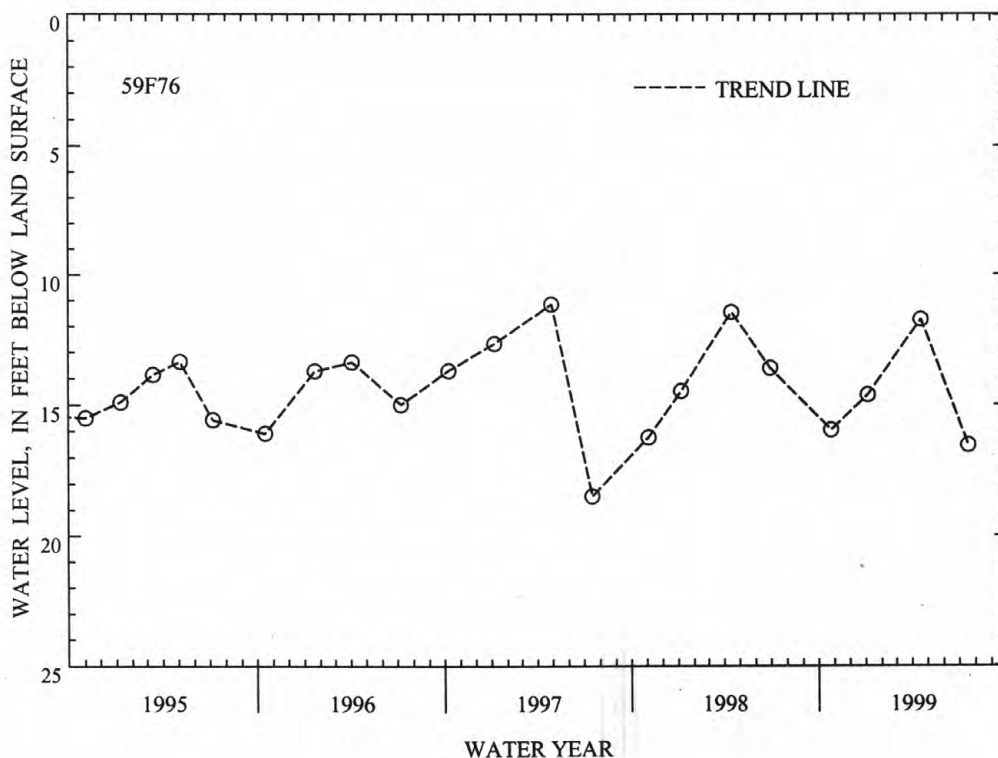
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--July 1990 to current year. Unpublished records available in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.14 ft below land-surface datum, Apr. 29, 1997; lowest recorded, 22.45 ft below land-surface datum, July 12, 1991.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	15.95	JAN 06	14.62	APR 19	11.74	JUL 19	16.54
WATER YEAR 1999		HIGHEST	11.74	APR 19, 1999			
		LOWEST	16.54	JUL 19, 1999			



GROUND-WATER LEVELS

YORK COUNTY

370934076251403. Local number, 59F 77 SOW 185B.

LOCATION.--Lat 37°09'34", long 76°25'14", Hydrologic Unit 02080108, 300 ft west of Kings Grant Road, 0.2 mi south of intersection of Kings Grant Road and State Highway 621, and 1.2 mi southeast of Dare. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 2.0 in., depth 120 ft, screened 110 to 120 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 4, 1991, to July 7, 1995, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to Sept. 4, 1991, occasional measurement with chalked tape by USGS and Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 10.05 ft above sea level. Measuring point: Top of casing, 1.3 ft above land-surface datum.

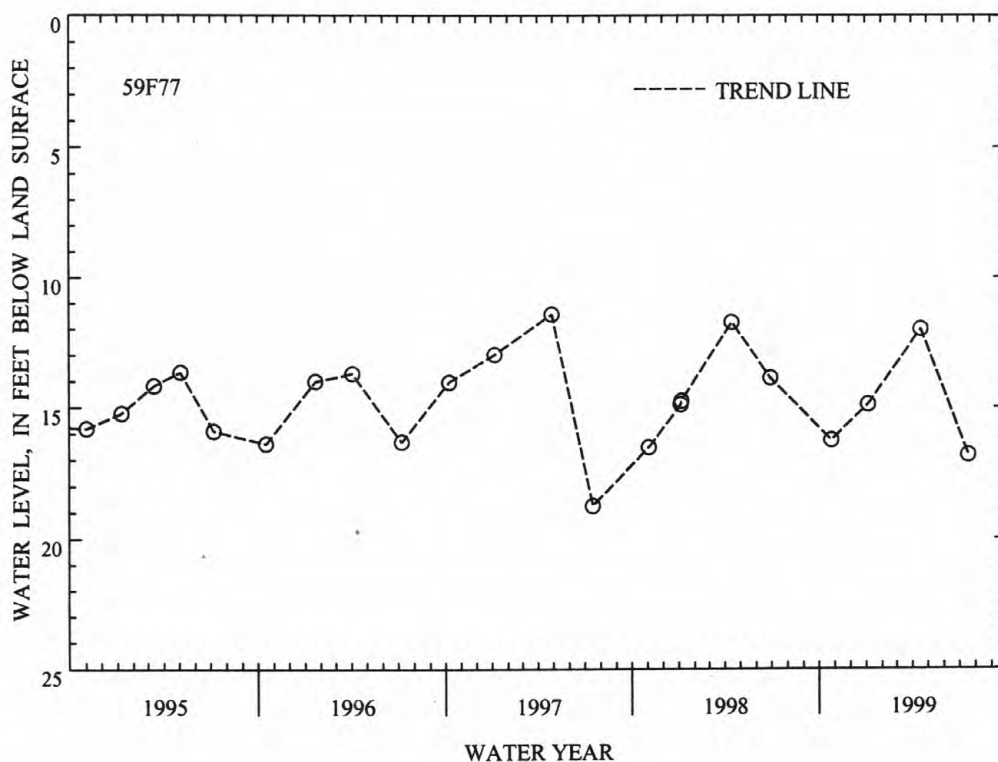
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--January 1991 to current year. Unpublished records available in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 11.42 ft below land-surface datum, Apr. 29, 1997; lowest measured, 19.31 ft below land-surface datum, July 3, 1991.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	16.24	JAN 06	14.88	APR 19	12.00	JUL 19	16.81
WATER YEAR 1999		HIGHEST	12.00	APR 19, 1999			
		LOWEST	16.81	JUL 19, 1999			



GROUND-WATER LEVELS

YORK COUNTY

370934076251404. Local number, 59F 78 SOW 185C.

LOCATION.--Lat 37°09'34", 76°25'14", Hydrologic Unit 02080108, 300 ft west of Kings Grant Road, 0.2 mi south of intersection of Kings Grant Road and State Highway 621, and 1.2 mi southeast of Dare. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Cornwallis Cave aquifer of Pliocene-Holocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 50 ft, screened 40 to 50 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 4, 1991, to July 7, 1995, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to Sept. 4, 1991, occasional measurement with chalked tape by USGS and Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 9.88 ft above sea level. Measuring point: Top of casing, 1.8 ft above land-surface datum.

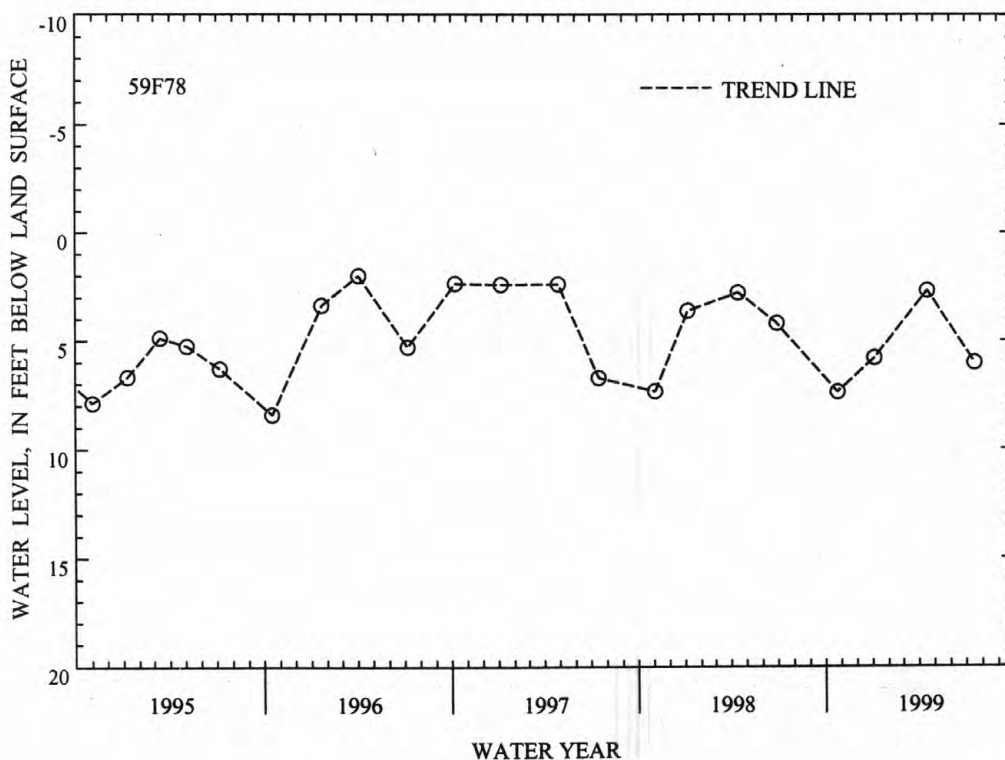
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--September 1990 to current year. Unpublished records available in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.64 ft below land-surface datum, Feb. 15, 1994; lowest measured, 8.40 ft below land-surface datum, Oct. 17, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	7.36	JAN 06	5.78	APR 19	2.67	JUL 19	6.01
WATER YEAR 1999		HIGHEST	2.67	APR 19, 1999			
		LOWEST	7.36	OCT 26, 1998			



GROUND-WATER LEVELS

YORK COUNTY

370934076251405. Local number, 59F 79 SOW 185D.

LOCATION.--Lat 37°09'34", long 76°25'14", Hydrologic Unit 02080108, 300 ft west of Kings Grant Road, 0.2 mi south of intersection of Kings Grant Road and State Highway 621, and 1.2 mi southeast of Dare. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 15 ft, screened 5 to 15 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 3, 1991, to July 7, 1995, bimonthly measurement with chalked tape. Prior to Sept. 3, 1991, digital recorder--60-minute punch.

DATUM.--Elevation of land-surface datum is 9.70 ft above sea level. Measuring point: Top of recorder shelf, 3.2 ft above land-surface datum prior to Nov. 6, 1991; top of casing, 1.80 ft thereafter. Readings from July 1990 to August 1991 should be 3.2 ft lower than previously published.

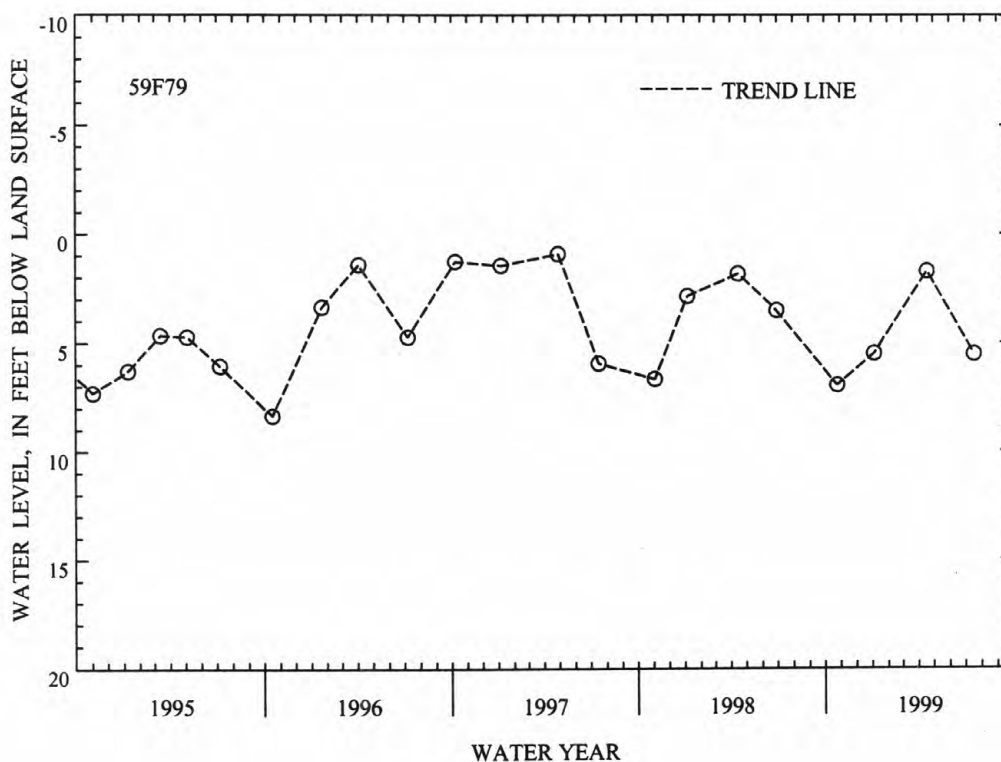
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--July 1990 to current year. Unpublished records available in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.90 ft below land-surface datum, Apr. 29, 1997; lowest recorded, 9.94 ft below land-surface datum, Dec. 6-8, 1990.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	6.93	JAN 06	5.47	APR 19	1.71	JUL 19	5.51
WATER YEAR 1999		HIGHEST	1.71	APR 19, 1999			
		LOWEST	6.93	OCT 26, 1998			



GROUND-WATER LEVELS

YORK COUNTY

370958076291502. Local number, 59F 81 SOW 186A.

LOCATION.--Lat 37°09'58", long 76°29'15", Hydrologic Unit 02080108, 100 ft south of State Highway 173, 0.8 mi southwest of intersection of U.S. Highway 17 and State Highway 173, and 2.8 mi west of Dare. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 132 ft, screened 112 to 132 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 4, 1991, to July 7, 1995, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to Sept. 4, 1991, occasional measurement with chalked tape by USGS and Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 50.77 ft above sea level. Measuring point: Top of casing, 1.6 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

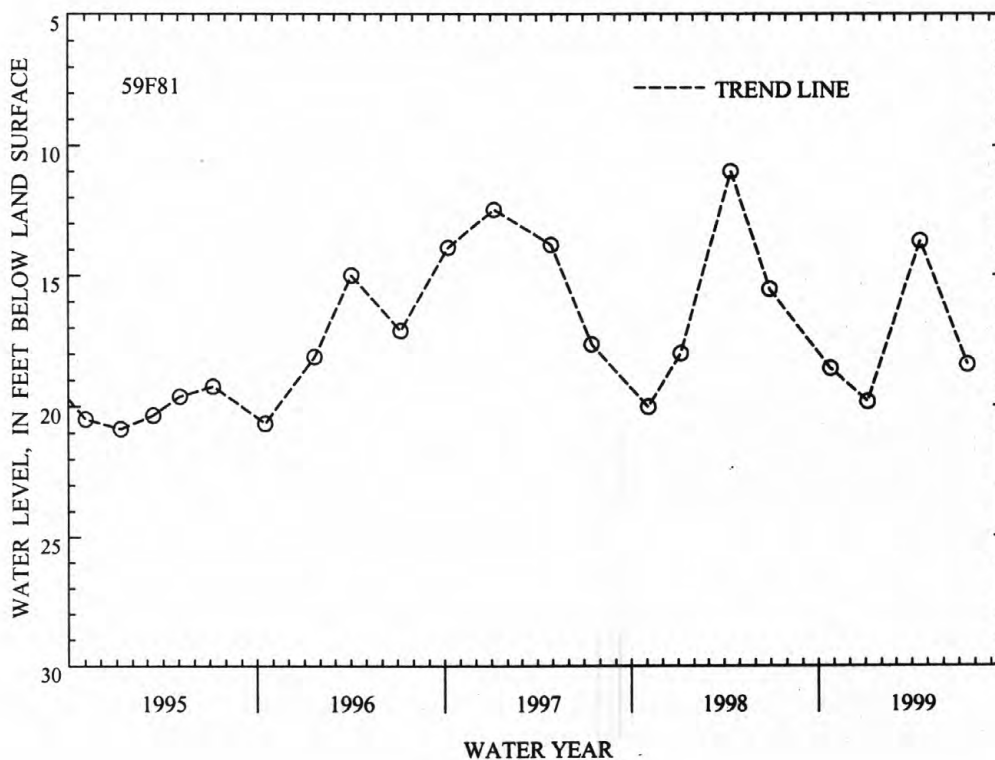
PERIOD OF RECORD.--September 1990 to current year. Unpublished records available in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 10.73 ft below land-surface datum, Apr. 6, 1994; lowest measured, 21.55 ft below land-surface datum, Jan. 8, 1992.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	18.56	JAN 06	19.83	APR 19	13.68	JUL 19	18.42

WATER YEAR 1999	HIGHEST	13.68	APR 19, 1999
	LOWEST	19.83	JAN 06, 1999



GROUND-WATER LEVELS

YORK COUNTY

371207076265502. Local number, 59F 86 SOW 188A.

LOCATION.--Lat 37°12'07", long 76°26'55", Hydrologic Unit 02080107, 200 ft north of State Highway 718, 0.3 mi east of intersection of State Highways 173 and 718, and 2.3 mi northwest of Dare. Owner: Virginia Department of Environmental Quality.

AQUIFER.--York County shallow aquifer system (undivided) of Miocene-Holocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 99 ft, screened 79 to 99 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 4, 1991, to July 7, 1995, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to Sept. 4, 1991, occasional measurement with chalked tape by USGS and Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 7 ft above sea level, from topographic map. Measuring point: Top of casing, 1.6 ft above land-surface datum.

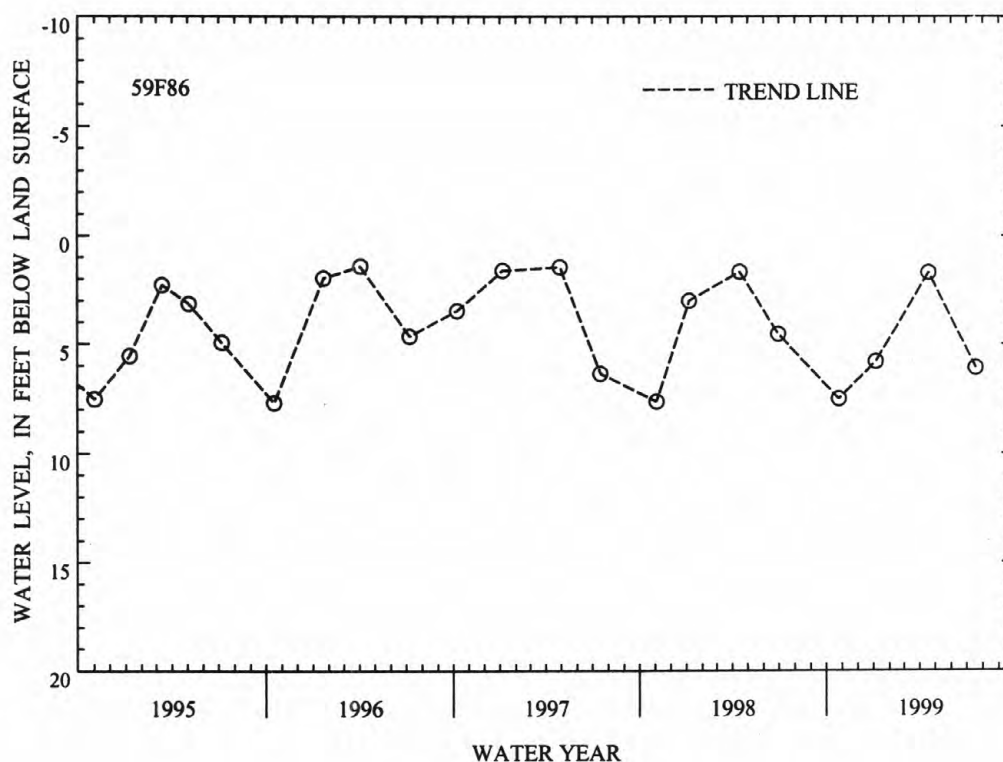
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--September 1990 to current year. Unpublished records available in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 1.37 ft below land-surface datum, Feb. 15, 1994; lowest measured, 7.73 ft below land-surface datum, Oct. 14, 1993.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	7.50	JAN 06	5.78	APR 19	1.68	JUL 19	6.07
WATER YEAR 1999		HIGHEST	1.68	APR 19, 1999			
		LOWEST	7.50	OCT 26, 1998			



GROUND-WATER LEVELS

YORK COUNTY

371053076252202. Local number, 59F 89 SOW 189A.

LOCATION.--Lat 37°10'53", long 76°25'22", Hydrologic Unit 02080108, 500 ft north of State Highway 617, 0.6 mi northeast of intersection of State Highways 620 and 617, and 1.3 mi northeast of Dare. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Yorktown-Eastover aquifer of Miocene-Pliocene age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 97 ft, screened 77 to 97 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 4, 1991, to July 7, 1995, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to Sept. 4, 1991, occasional measurement with chalked tape by USGS and Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 4.63 ft above sea level. Measuring point: Top of casing, 1.5 ft above land-surface datum.

REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

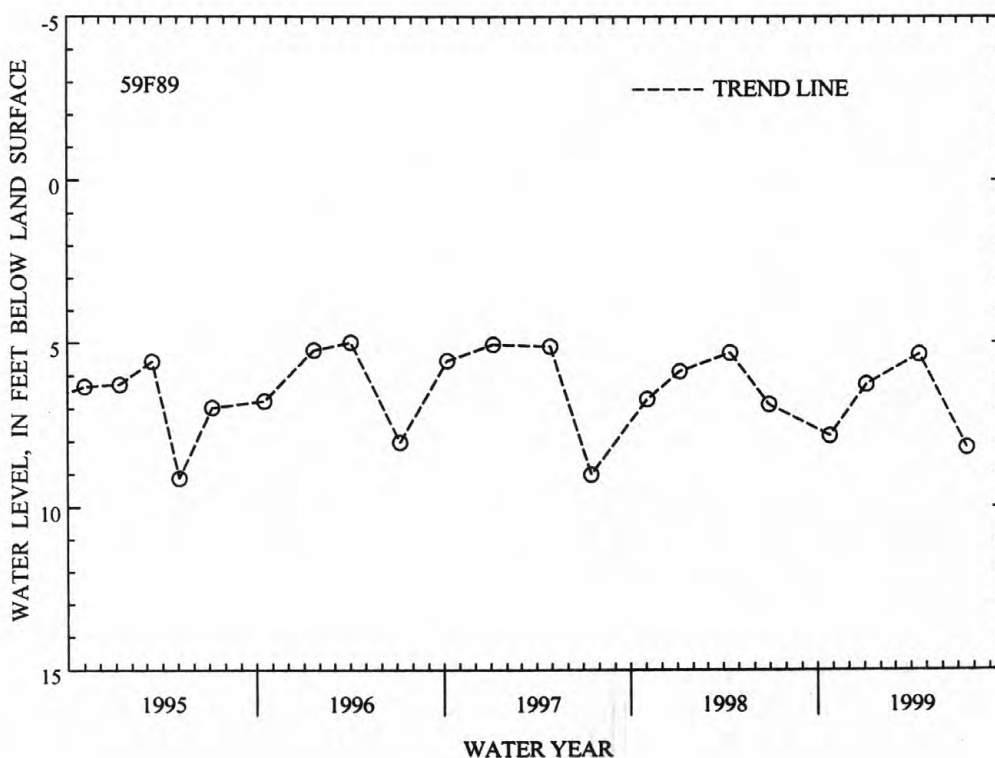
PERIOD OF RECORD.--September 1990 to current year. Unpublished records available in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 4.86 ft below land-surface datum, Dec. 15, 1992; lowest measured, 9.11 ft below land-surface datum, May 4, 1995.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	7.83	JAN 06	6.27	APR 19	5.35	JUL 19	8.19

WATER YEAR 1999	HIGHEST	5.35	APR 19, 1999
	LOWEST	8.19	JUL 19, 1999



GROUND-WATER LEVELS

YORK COUNTY

371053076252203. Local number, 59F 96 SOW 189B.

LOCATION.--Lat 37°10'53", long 76°25'22", Hydrologic Unit 02080108, 500 ft north of State Highway 617, 0.6 mi northeast of intersection of State Highways 620 and 617, and 1.3 mi northeast of Dare. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 15 ft, screened 5 to 15 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 4, 1991, to July 7, 1995, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to Sept. 4, 1991, occasional measurement with chalked tape by USGS and Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 4.77 ft above sea level. Measuring point: Top of casing, 1.6 ft above land-surface datum.

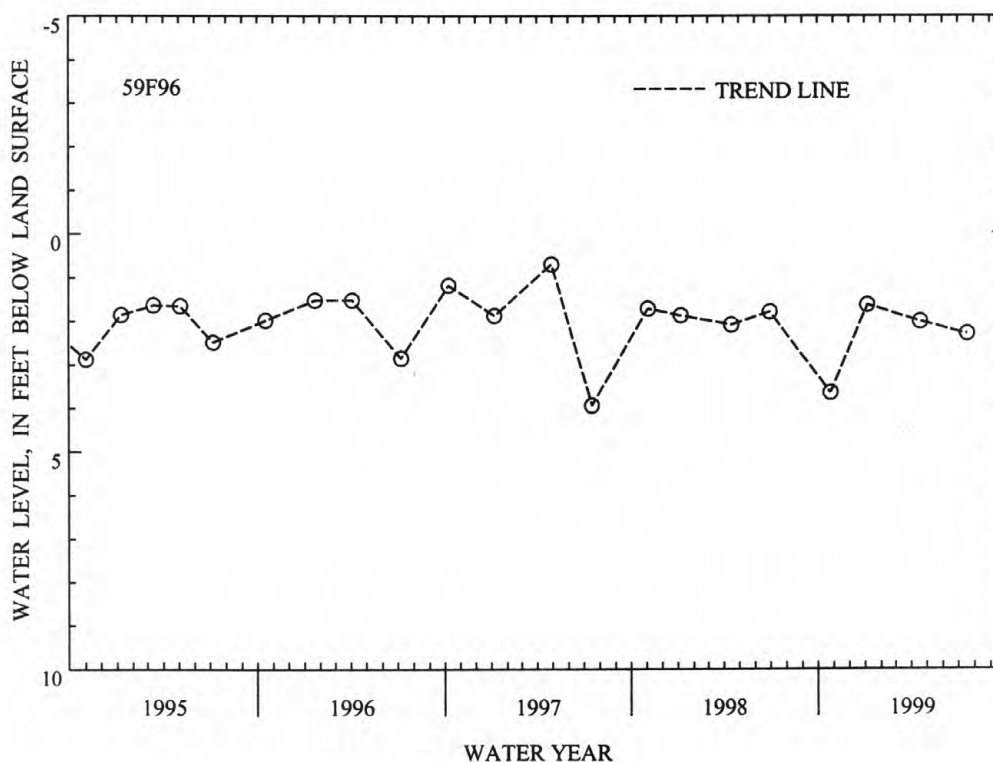
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division.

PERIOD OF RECORD.--September 1990 to current year. Unpublished records available in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.70 ft below land-surface datum, Apr. 29, 1997; lowest measured, 4.68 ft below land-surface datum, June 11, 1991.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	3.65	JAN 06	1.64	APR 19	2.02	JUL 19	2.30
WATER YEAR 1999		HIGHEST	1.64	JAN 06, 1999			
		LOWEST	3.65	OCT 26, 1998			



GROUND-WATER LEVELS

YORK COUNTY

371314076252203. Local number, 59F 99 SOW 190B.

LOCATION.--Lat 37°13'13", long 76°25'25", Hydrologic Unit 02080107, 50 ft north of State Highway 629, 0.8 mi northeast of intersection of State Highways 173 and 629, and 1.8 mi north of Seaford. Owner: Virginia Department of Environmental Quality.

AQUIFER.--Columbia aquifer of Quaternary age.

WELL CHARACTERISTICS.--Drilled observation water well, diameter 4.5 in., depth 15 ft, screened 5 to 15 ft.

INSTRUMENTATION.--Occasional measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Sept. 4, 1991, to July 7, 1995, bimonthly measurement with chalked tape by Virginia Department of Environmental Quality - Water Division personnel. Prior to Sept. 4, 1991, occasional measurement with chalked tape by USGS and Virginia Department of Environmental Quality - Water Division personnel.

DATUM.--Elevation of land-surface datum is 3.49 ft above sea level. Measuring point: Top of casing, 1.5 ft above land-surface datum.

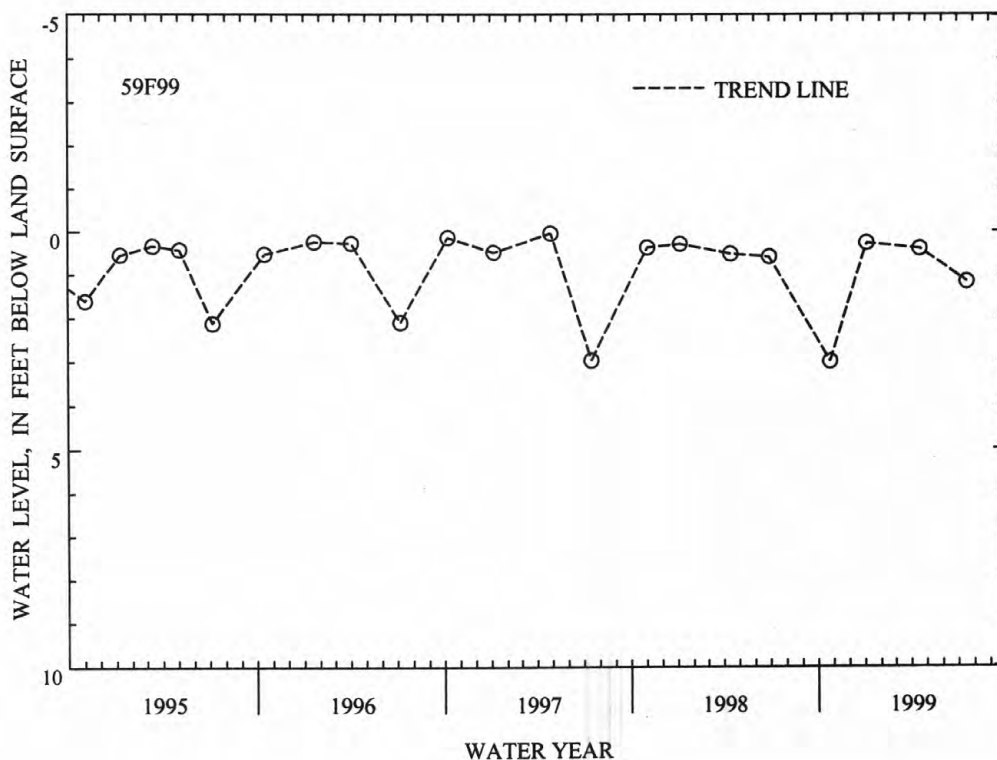
REMARKS.--Records provided by the Virginia Department of Environmental Quality - Water Division. This well is known to contain dissolved solids greater than or equal to 1,000 mg/l.

PERIOD OF RECORD.--September 1990 to current year. Unpublished records available in files of the Virginia Department of Environmental Quality - Water Division.

EXTREMES FOR PERIOD OF RECORD.--Highest water level measured, 0.04 ft below land-surface datum, Apr. 29, 1997, Feb. 15, 1994; lowest measured, 3.62 ft below land-surface datum, June 11, 1991, Aug. 18, 1993.

WATER LEVEL, IN FEET BELOW LAND-SURFACE DATUM, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL	DATE	WATER LEVEL
OCT 26	3.00	JAN 06	0.27	APR 19	0.40	JUL 19	1.17
WATER YEAR 1999	HIGHEST	0.27	JAN 06, 1999				
	LOWEST	3.00	OCT 26, 1998				



GROUND-WATER-QUALITY RECORDS

The following remark codes may appear with the water-quality data in this section:

PRINTED OUTPUT	REMARK
E	Estimated value.
>	Actual value is known to be greater than the value shown.
<	Actual value is known to be less than the value shown.
K	Results based on colony count outside the acceptance range (non-ideal colony count).
L	Biological organism count less than 0.5 percent (organism may be observed rather than counted).
D	Biological organism count equal to or greater than 15 percent (dominant).
&	Biological organism estimated as dominant.

Dissolved Trace-Element Concentrations

NOTE.--Traditionally, dissolved trace-element concentrations have been reported at the microgram per liter (ug/L) level. Recent evidence, mostly from large rivers, indicates that actual dissolved-phase concentrations for a number of trace elements are within the range of 10's to 100's of nanograms per liter (ng/L). Data above the ug/L level should be viewed with caution. Such data may actually represent elevated environmental concentrations from natural or human causes; however, these data could reflect contamination introduced during sampling, processing, or analysis. To confidently produce dissolved trace-element data with insignificant contamination, the U.S. Geological Survey began using new trace-element protocols at some stations in water year 1994. Full implementation of the protocols will take place during the 1995 water year.

Change in National Trends Network procedures

NOTE.--Sample handling procedures at all National Trends Network stations were changed substantially on January 11, 1994, in order to reduce contamination from the sample shipping container. The data for samples before and after that date are different and not directly comparable. A tabular summary of the differences, based on a special intercomparison study, is available from the NADP/NTN Coordination Office, Colorado State University, Fort Collins, CO 80523 (Telephone: 303-491-5643).

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER		STATION	NUMBER	GEO- LOGIC UNIT	DATE	QUALITY ASSURANCE TYPE	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	DEPTH TO BOT- TOM OF SAMPLE INTER- VAL (FT) (72016)	DEPTH TO TOP OF SAMPLE INTER- VAL (FT) (72015)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)
ALBEMARLE COUNTY											
40N	4	380244078460201		000GRNT	07-19-99	--	--	300	--	--	750
41N	5	380206078374701		400GRGS	07-19-99	--	--	400	385	144	690
APPOMATTOX COUNTY											
40G	2	372156078494801		400GRGS	06-30-99	--	--	410	336	333	860
AUGUSTA COUNTY											
39NS	1	380311078555201		371ELBK	07-07-99	--	--	--	--	--	1318
BATH COUNTY											
31M	1	375912079582501		341MLBR	08-10-99	--	--	385	371	280	1650
BOTETOURT COUNTY											
33J	1	373053079395901		377SHDY	08-25-99	--	--	376	--	376	1040
33J	2	373034079420501		377ROME	08-25-99	--	--	610	610	300	1010
CAROLINE COUNTY											
50M	2	385814077321401		400PCMB	12-03-98	--	20.65	39.94	39.94	34.94	250
				400PCMB	03-24-99	--	11.85	39.94	39.94	34.94	250
				400PCMB	04-19-99	--	13.03	39.94	39.94	34.94	250
				400PCMB	06-18-99	--	16.93	39.94	39.94	34.94	250
				400PCMB	09-29-99	--	15.91	39.94	39.94	34.94	250
50M	3	385814077321402		121CSPKU	12-03-98	--	19.85	25.14	25.14	20.14	250
				121CSPKU	03-24-99	--	7.03	25.14	25.14	20.14	250
				121CSPKU	04-19-99	--	10.54	25.14	25.14	20.14	250
				121CSPKU	06-18-99	--	15.76	25.14	25.14	20.14	250
				121CSPKU	09-29-99	--	11.81	25.14	25.14	20.14	250
50M	4	385812077321801		400PCMB	12-03-98	--	13.14	15.49	15.49	10.49	235
				400PCMB	03-24-99	--	7.03	15.49	15.49	10.49	235
				400PCMB	04-19-99	--	7.78	15.49	15.49	10.49	235
				400PCMB	04-19-99	REPLICATE	7.78	15.49	15.49	10.49	235
				400PCMB	06-18-99	--	10.43	15.49	15.49	10.49	235
50M	5	385809077322001		400PCMB	09-30-99	--	9.09	15.49	15.49	10.49	235
				400PCMB	12-02-98	--	5.17	8.62	8.62	8.42	210
				400PCMB	03-24-99	--	2.87	8.62	8.62	8.42	210
				400PCMB	04-20-99	--	3.56	8.62	8.62	8.42	210
				400PCMB	06-18-99	--	5.03	8.62	8.62	8.42	210
50M	6	385809077322002		400PCMB	09-30-99	--	4.25	8.62	8.62	8.42	210
				400PCMB	09-30-99	REPLICATE	4.25	8.62	8.62	8.42	210
				110QRNR	03-24-99	--	1.39	4.84	4.84	.0	210
				110QRNR	04-21-99	--	2.79	4.84	4.84	.0	210
				110QRNR	04-21-99	REPLICATE	2.79	4.84	4.84	.0	210
50M	7	385806077322501		400PCMB	12-03-98	--	26.91	46.28	46.28	41.28	240
				400PCMB	12-03-98	REPLICATE	26.91	46.28	46.28	41.28	240
				400PCMB	03-24-99	--	26.62	46.28	46.28	41.28	240
				400PCMB	04-21-99	--	26.21	46.28	46.28	41.28	240
				400PCMB	06-18-99	--	26.98	46.28	46.28	41.28	240

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)
ALBEMARLE COUNTY--Continued									
40N 4	320	7.1	737	35.2	15.6	--	.5	5	131
41N 5	75	5.8	739	33.8	17.0	--	8.7	93	21
APPOMATTOX COUNTY--Continued									
40G 2	173	7.4	732	22.9	15.8	.3	.8	8	97
AUGUSTA COUNTY--Continued									
39NS 1	186	7.7	720	31.7	12.7	--	7.4	74	103
BATH COUNTY--Continued									
31M 1	366	8.2	710	29.3	14.1	--	.9	9	215
BOTETOURT COUNTY--Continued									
33J 1	257	7.4	729	22.1	14.2	--	7.8	80	172
33J 2	371	7.3	728	24.9	13.2	--	3.3	33	224
CAROLINE COUNTY--Continued									
50M 2	37	6.0	--	--	16.3	--	6.4	--	--
	65	6.0	748	16.1	15.1	--	.7	7	--
	58	5.6	--	--	16.2	--	5.0	--	--
	67	--	--	--	14.9	--	1.9	--	--
	62	6.3	--	--	14.7	--	4.3	--	--
50M 3	27	5.3	--	--	16.5	--	8.6	--	--
	39	5.1	747	16.1	14.8	--	2.9	29	--
	39	4.7	--	--	15.9	--	8.6	--	--
	38	--	--	--	13.9	--	7.1	--	--
	39	5.3	--	--	15.9	--	9.1	--	--
50M 4	38	5.8	--	--	16.0	--	3.8	--	--
	49	4.8	747	16.1	11.8	--	5.6	53	--
	50	4.8	--	--	12.7	--	6.9	--	--
	50	4.8	--	--	12.7	--	6.9	--	--
	53	--	--	--	13.1	--	6.5	--	--
50M 5	52	4.5	--	--	16.4	--	7.3	--	--
	27	5.4	--	--	14.8	--	.3	--	--
	36	5.6	747	17.7	9.7	--	.1	1	--
	35	4.8	--	--	12.9	--	.5	--	--
	36	--	--	--	12.8	--	.3	--	--
50M 6	36	--	--	--	16.5	--	.5	--	--
	36	--	--	--	16.5	--	.5	--	--
	35	5.1	747	16.4	8.1	--	1.8	16	--
	33	4.1	--	--	10.3	--	.3	--	--
	33	4.1	--	--	10.3	--	.3	--	--
50M 7	68	7.1	--	--	14.5	--	2.2	--	--
	68	7.1	--	--	14.5	--	2.2	--	--
	76	6.5	746	16.0	14.5	--	.1	1	--
	83	6.3	--	--	14.5	--	1.6	--	--
	90	--	--	--	14.5	--	1.2	--	--

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)
ALBEMARLE COUNTY--Continued									
40N 4	.0	107	--	.17	--	--	--	--	.3
41N 5	.0	17	--	.32	--	--	--	--	.2
APPOMATTOX COUNTY--Continued									
40G 2	.0	80	--	.05	--	--	--	--	.2
AUGUSTA COUNTY--Continued									
39NS 1	.0	84	--	.57	--	--	--	--	.2
BATH COUNTY--Continued									
31M 1	8.9	176	--	<.05	--	--	--	--	.3
BOTETOURT COUNTY--Continued									
33J 1	.0	141	--	.06	--	--	--	--	.3
33J 2	.0	184	--	.24	--	--	--	--	.4
CAROLINE COUNTY--Continued									
50M 2	--	--	<.001	.28	<.002	<.1	.004	.004	--
	--	--	.002	.25	.002	<.1	.005	.007	--
	--	--	<.01	.25	<.02	<.1	<.05	.02	--
	--	--	.002	.22	.004	<.1	.004	.003	--
	--	--	<.001	.28	<.002	<.1	E.005	.004	--
50M 3	--	--	<.001	2.3	<.002	<.1	.003	.001	--
	--	--	<.001	2.6	.004	<.1	<.004	.001	--
	--	--	<.01	2.6	<.02	<.1	<.05	<.01	--
	--	--	<.001	2.8	.004	<.1	<.004	.002	--
	--	--	<.001	--	<.002	E.08	<.006	<.001	--
50M 4	--	--	<.001	2.0	<.002	.1	.008	.001	--
	--	--	<.001	3.8	.004	<.1	<.004	.002	--
	--	--	<.01	3.5	<.02	<.1	<.05	.01	--
	--	--	<.01	3.3	<.02	<.1	<.05	.01	--
	--	--	<.001	3.2	.004	E.09	<.004	.001	--
50M 5	--	--	<.001	2.6	.004	<.1	<.006	<.001	--
	--	--	<.001	.032	.012	<.1	.004	.002	--
	--	--	.001	.059	.019	.2	.013	.002	--
	--	--	<.01	.1	.04	E.06	<.05	.01	--
	--	--	.001	.008	.034	E.05	<.004	.002	--
50M 6	--	--	.001	.09	.023	E.08	<.006	.001	--
	--	--	.001	.086	.024	.1	E.003	<.001	--
	--	--	<.001	.025	.004	E.09	<.004	.002	--
	--	--	<.01	.10	<.02	<.1	<.05	.01	--
	--	--	<.01	.10	<.02	E.05	<.05	.01	--
50M 7	--	--	.001	.29	<.002	<.1	.039	.045	--
	--	--	.002	.29	<.002	<.1	.041	.043	--
	--	--	.005	.28	.002	<.1	.049	.050	--
	--	--	<.01	.23	<.02	<.1	E.04	.05	--
	--	--	.005	.35	.005	.1	.033	.013	--

E Estimated

< Actual value is known to be less than the value shown.

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	STATION	NUMBER	GEO- LOGIC UNIT	DATE	QUALITY ASSURANCE TYPE	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	DEPTH TO BOT- TOM OF SAMPLE VAL (FT) (72016)
CAROLINE COUNTY--Continued								
50M 7	385806077322501	400PCMB	09-29-99	--		28.01	46.28	46.28
50M 8	375908077314801	121CSPKU	12-01-98	--		1.27	8.50	8.3
		121CSPKU	03-25-99	--		.31	8.50	8.3
		121CSPKU	06-16-99	--		.74	8.50	8.3
		121CSPKU	09-30-99	--		.01	8.50	8.3
50M 9	375904077315401	400PCMB	12-01-98	--		4.53	10.35	10.3
		400PCMB	03-25-99	--		3.65	10.35	10.3
		400PCMB	06-16-99	--		3.85	10.35	10.33
		400PCMB	09-30-99	--		3.07	10.35	10.33
		400PCMB	09-30-99	REPLICATE		3.07	10.35	10.33
50M 10	375904077315402	121CSPKU	12-01-98	--		4.93	7.90	7.6
		121CSPKU	03-25-99	--		4.16	7.90	7.6
		121CSPKU	03-25-99	REPLICATE		4.16	7.90	7.6
		121CSPKU	06-16-99	--		4.25	7.90	6.6
		121CSPKU	09-30-99	--		3.45	7.90	6.6
50M 11	375853077315901	400PCMB	12-01-98	--		4.90	41.80	41.6
		400PCMB	03-25-99	--		-1.18	41.80	41.6
		400PCMB	06-16-99	--		2.27	41.80	41.6
		400PCMB	09-30-99	--		1.79	41.80	41.6
50M 12	375853077315902	121CSPKU	12-01-98	--		4.74	15.40	15.2
		121CSPKU	03-25-99	--		-1.27	15.40	15.2
		121CSPKU	06-16-99	--		2.12	15.40	15.2
		121CSPKU	09-30-99	--		1.42	15.40	15.2
50M 13	375853077315903	121CSPKU	12-01-98	--		6.09	10.20	10.0
		121CSPKU	03-25-99	--		1.30	10.20	10.0
		121CSPKU	06-16-99	--		3.81	10.20	10.0
		121CSPKU	09-30-99	--		1.24	10.20	10.0
50M 14	375842077321301	400PCMB	12-01-98	--		18.08	47.50	47.3
		400PCMB	03-25-99	--		13.83	47.50	47.3
		400PCMB	06-18-99	--		13.97	47.50	47.3
		400PCMB	09-30-99	--		--	47.50	47.3
50M 15	375842077321302		12-01-98	--		18.00	27.00	26.8
			03-25-99	--		13.49	27.00	26.8
			06-18-99	--		13.90	27.00	26.8
			09-30-99	--		16.62	27.00	26.8

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	DEPTH TO TOP OF SAMPLE INTER- VAL (FT) (72015)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)
CAROLINE COUNTY--Continued								
50M 7	41.28	240	84	6.7	--	--	14.5	.3
50M 8	6.0	200	370	6.4	--	--	15.5	.5
	6.0	200	350	6.4	750	13.0	9.1	1.0
	6.0	200	424	6.4	--	--	18.3	.3
	6.0	200	598	6.3	--	--	20.8	.1
50M 9	9.2	215	248	6.5	--	--	15.3	.0
	9.2	215	312	6.7	750	13.5	11.5	.1
	9.2	215	320	6.6	--	--	14.7	.0
	9.2	215	306	6.5	--	--	17.5	.0
	9.2	215	306	6.5	--	--	17.5	.0
50M 10	5.6	215	200	6.4	--	--	14.8	.1
	5.6	215	264	6.6	750	14.0	11.1	.04
	5.6	215	264	6.6	750	14.0	11.1	.0
	5.6	215	260	6.5	--	--	15.5	.0
	5.6	215	248	6.3	--	--	17.9	.0
50M 11	36.6	240	52	6.6	--	--	14.7	3.6
	36.6	240	64	6.4	749	13.0	14.4	3.5
	36.6	240	96	6.3	--	--	14.4	2.3
	36.6	240	59	6.3	--	--	14.3	4.1
50M 12	13.2	240	15	5.1	--	--	15.9	6.8
	13.2	240	20	5.6	749	13.0	12.7	5.0
	13.2	240	21	5.5	--	--	13.1	7.1
	13.2	240	19	5.2	--	--	16.3	6.0
50M 13	8.0	240	47	5.7	--	--	15.5	1.9
	8.0	240	48	5.9	749	14.0	10.2	1.5
	8.0	240	28	5.9	--	--	13.8	3.9
	8.0	240	24	5.5	--	--	17.9	2.7
50M 14	42.3	265	38	5.6	--	--	13.9	7.1
	42.3	265	36	6.0	748	14.0	14.0	5.4
	42.3	265	36	--	--	--	14.1	6.6
	42.3	265	36	6.2	--	--	14.0	7.6
50M 15	24.8	265	22	4.6	--	--	15.1	7.4
	24.8	265	24	5.2	748	14.0	14.3	4.6
	24.8	265	25	--	--	--	13.7	8.1
	24.8	260	23	5.4	--	--	14.3	9.0

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS ORTHOS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHOS DIS- SOLVED (MG/L AS P) (00671)
CAROLINE COUNTY--Continued							
50M 7	--	.007	.44	.003	<.1	.048	.034
50M 8	--	.007	.007	13.3	14	.002	.012
	9	.002	.022	7.26	--	<.004	.004
	--	.008	.026	10	10	.004	.003
	--	.003	<.005	6.97	15	E.003	<.001
50M 9	--	<.001	.005	1.2	1.2	.001	.003
	1	<.001	.005	1.3	1.2	<.004	.002
	--	.005	.008	1.4	1.2	<.004	.054
	--	.004	.005	1.3	1.3	<.006	<.001
	--	<.001	<.005	1.4	1.3	<.006	.001
50M 10	--	.001	<.005	1.2	1.3	.001	.012
	0	.001	.005	1.3	1.2	<.004	.002
	0	.001	.005	1.3	1.1	<.004	.004
	--	<.001	.006	1.3	1.2	.006	<.001
	--	<.001	<.005	1.2	1.2	E.003	<.001
50M 11	--	<.001	.022	<.002	<.1	.079	.082
	35	.001	.028	.003	<.1	.086	.084
	--	.001	.031	.004	<.1	.088	.085
	--	<.001	.01	<.002	E.05	.093	.084
50M 12	--	<.001	.11	<.002	<.1	.003	.003
	48	<.001	.13	.004	<.1	<.004	.003
	--	.002	.11	.006	<.1	<.004	.01
	--	<.001	.12	.003	<.1	<.006	<.001
50M 13	--	<.001	.040	.003	<.1	.002	.001
	14	<.001	.041	.006	<.1	<.004	.002
	--	<.001	.061	.004	<.1	<.004	<.001
	--	.002	.061	.006	<.1	<.006	<.001
50M 14	--	<.001	.34	<.002	<.1	.001	.001
	53	.001	.27	.002	<.1	<.004	.003
	--	<.001	.26	.004	E.08	<.004	.001
50M 15	--	<.001	.28	<.002	<.1	<.006	<.001
	--	<.001	.86	<.002	<.1	.010	.005
	46	<.001	.85	.002	<.1	<.004	.002
	--	.001	.82	.003	<.1	<.004	.002
	--	<.001	.81	<.002	E.06	<.006	.001

E Estimated

< Actual value is known to be less than the value shown.

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- IFIER	STATION	NUMBER	GEO- LOGIC UNIT	DATE	QUALITY ASSURANCE TYPE	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	DEPTH TO BOT- TOM OF SAMPLE INTER- VAL (FT) (72016)
CAROLINE COUNTY--Continued								
50M 16	385814077321403	121CSPKU	04-19-99	--	7.84	16.20	16.0	
		121CSPKU	06-18-99	--	13.00	16.20	16.0	
		121CSPKU	09-29-99	--	8.64	16.20	16.0	
50M 17	385814077321404	121CSPKU	04-19-99	--	7.69	10.50	10.3	
		121CSPKU	09-29-99	--	8.53	10.50	10.3	
50M 18	385812077321802	400PCMB	04-20-99	--	7.83	14.70	14.5	
		400PCMB	09-30-99	--	9.42	14.70	14.5	
50M 19	385812077321803	121CSPKU	04-19-99	--	7.38	11.50	11.3	
		121CSPKU	09-30-99	--	8.66	11.50	11.3	
50M 21	375810077321901	400PCMB	04-20-99	--	6.18	10.10	9.9	
50M 22	375810077321902	400PCMB	04-20-99	--	5.70	7.60	7.4	
50M 23	385809077322003	400PCMB	04-21-99	--	3.27	7.70	7.1	
50M 24	375808077321801	110QRNR	04-21-99	--	2.30	4.30	4.3	
50M 25	375808077322001	110QRNR	04-21-99	--	2.85	3.60	3.4	
		110QRNR	09-29-99	--	--	3.60	3.4	
50M 26	375807077322101	400PCMB	04-21-99	--	--	9.10	8.9	
		400PCMB	09-29-99	--	3.93	9.10	8.9	
50M 27	375806077322301	400PCMB	06-18-99	--	24.39	24.80	24.6	
50M 28	375808077321802	400PCMB	04-21-99	--	--	3.90	--	
51M 15	385832077253501	121CSPKU	12-02-98	--	22.35	25.29	25.29	
		121CSPKU	04-22-99	--	21.55	25.29	26.8	
		121CSPKU	04-22-99	REPLICATE	21.55	25.29	26.8	
		121CSPKU	06-17-99	--	22.15	25.29	25.29	
		121CSPKU	09-27-99	--	21.65	25.29	25.29	
51M 16	385827077254101	121CSPKU	12-02-98	--	9.78	14.50	14.50	

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- IFIER	DEPTH TO TOP OF SAMPLE INTER- VAL (FT) (72015)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	OXYGEN, DIS- SOLVED (MG/L) (00300)
CAROLINE COUNTY--Continued								
50M 16	11.4	250	56	4.9	--	--	17.7	8.7
	11.4	250	86	--	--	--	14.2	5.6
	11.4	250	55	5.6	--	--	18.5	8.0
50M 17	4.7	250	55	4.7	--	--	14.6	8.9
	4.7	250	64	5.7	--	--	19.9	7.6
50M 18	12.5	235	39	4.7	--	--	15.0	6.2
	12.5	235	38	4.3	--	--	16.1	7.4
50M 19	9.3	235	50	4.9	--	--	15.4	6.7
	9.3	235	57	5.3	--	--	17.9	7.6
50M 21	7.9	220	34	4.7	--	--	12.2	2.8
50M 22	5.4	220	31	4.7	--	--	19.0	4.0
50M 23	5.5	210	28	--	--	--	10.5	.6
50M 24	2.3	210	31	4.3	--	--	11.1	.4
50M 25	1.4	210	66	4.9	--	--	11.3	4.8
	1.4	210	51	5.1	--	--	17.9	2.1
50M 26	6.9	215	78	4.6	--	--	10.9	5.2
	6.9	215	78	5.2	--	--	15.6	4.8
50M 27	20.0	240	--	--	--	--	--	--
50M 28	--	210	--	--	--	--	--	--
51M 15	20.29	190	156	4.2	--	--	16.2	8.1
51M 16	24.8	190	198	4.1	754	11.0	13.6	9.2
	24.8	190	198	4.1	754	11.0	13.6	9.2
	20.29	190	233	4.5	--	--	13.5	9.1
	20.29	190	223	4.6	--	--	15.8	8.0
	9.50	160	43	4.3	--	--	16.8	2.8

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- PIER	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)
CAROLINE COUNTY--Continued							
50M 16	--	<.01	3.8	<.02	<.1	<.05	<.01
	--	.001	3.9	.024	E.10	<.004	.003
	--	<.001	3.4	.017	E.10	<.006	<.001
50M 17	--	<.01	3.7	<.02	<.1	<.05	.01
	--	<.001	3.4	<.002	E.06	E.003	.001
50M 18	--	<.01	2.4	<.02	E.05	<.05	.01
	--	<.001	--	<.002	<.1	E.004	.001
50M 19	--	<.01	3.3	.02	<.1	<.05	.01
	--	<.001	2.2	.015	E.09	E.003	.002
50M 21	--	<.01	.11	<.02	<.1	<.05	.01
50M 22	--	<.01	.11	<.02	<.1	<.05	<.01
50M 23	--	<.01	.09	.06	.1	<.05	.01
50M 24	--	<.01	.10	<.02	<.1	<.05	.01
50M 25	--	<.01	2.5	<.02	<.1	<.05	.01
	--	<.001	.049	.016	.4	.012	.002
50M 26	--	<.01	4.1	<.02	<.1	<.05	.01
	--	<.001	4.2	<.002	<.1	<.006	<.001
50M 27	--	.009	1.1	.212	.4	.02	.001
50M 28	--	<.01	.10	.03	.2	<.05	.02
51M 15	--	<.001	16.113	<.002	<.1	.001	.001
	90	<.001	14	.006	<.1	<.004	.001
	90	<.001	13	.006	E.05	<.004	.002
	--	.001	10	.005	E.09	<.004	.003
	--	<.001	14.292	<.002	<.1	<.006	.001
51M 16	--	.003	1.7	<.002	<.1	.002	.002

E Estimated

< Actual value is known to be less than the value shown.

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	STATION	NUMBER	GEO- LOGIC UNIT	DATE	QUALITY ASSURANCE TYPE	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	DEPTH TO BOT- TOM OF SAMPLE INTER- VAL (FT) (72016)	DEPTH TO TOP OF SAMPLE INTER- VAL (FT) (72015)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)
CAROLINE COUNTY--Continued										
51M 16	385827077254101	121CSPKU	04-22-99	--	--	8.24	14.50	14.50	9.50	160
		121CSPKU	06-17-99	--	--	8.88	14.50	14.50	9.50	160
		121CSPKU	09-27-99	--	--	5.22	14.50	14.50	9.50	160
51M 17	385819077254501	121CSPKU	12-02-98	--	--	11.39	13.98	13.98	8.98	130
		121CSPKU	04-22-99	--	--	11.01	13.98	13.98	8.98	130
		121CSPKU	06-17-99	REPLICATE	--	11.30	13.98	13.98	8.98	130
		121CSPKU	06-17-99	--	--	11.30	13.98	13.98	8.98	130
		121CSPKU	09-27-99	--	--	10.03	13.98	13.98	8.98	130
51M 18	385811077254901	125PLCN	12-02-98	--	--	10.57	52.54	52.54	47.54	110
		125PLCN	03-26-99	--	--	10.14	52.54	52.54	47.54	110
		125PLCN	06-17-99	--	--	--	52.54	52.54	47.54	110
51M 19	385811077254902	125PLCN	09-27-99	--	--	11.46	52.54	52.54	47.54	110
		110QRNR	12-02-98	--	--	7.46	9.80	9.8	4.80	110
		110QRNR	03-26-99	--	--	6.60	9.80	9.8	4.80	110
		110QRNR	06-17-99	--	--	8.30	9.80	5.90	4.80	110
		110QRNR	09-27-99	--	--	7.38	9.80	9.8	4.80	110
51M 20	385759077254501	110QRNR	12-02-98	--	--	10.51	14.89	14.89	9.89	115
		110QRNR	12-02-98	REPLICATE	--	10.71	14.89	14.89	9.89	115
		110QRNR	03-26-99	--	--	8.67	14.89	14.89	9.89	115
		110QRNR	06-17-99	--	--	9.58	14.89	14.89	9.89	115
		110QRNR	09-27-99	--	--	9.64	14.89	14.89	9.89	115
51M 21	385748077255801	121CSPKU	12-02-98	--	--	14.72	17.53	17.53	12.53	185
		121CSPKU	03-26-99	--	--	12.61	17.53	17.53	12.53	185
		121CSPKU	06-17-99	--	--	13.23	17.53	17.53	12.53	185
		121CSPKU	09-27-99	REPLICATE	--	14.30	17.53	17.53	12.5	185
		121CSPKU	09-27-99	--	--	14.30	17.53	17.53	12.5	185
51M 22	375729077254301	110QRNR	09-27-99	--	--	7.89	13.40	13.2	12	110
51M 23	375729077254302	110QRNR	09-27-99	--	--	7.71	11.50	11.3	9.3	110
CHARLOTTE COUNTY										
41E 1	370311078390201	000GRGS	09-01-99	--	--	--	200	200	103	555
41ES 1	370330078382601	000GRGS	09-01-99	--	--	--	--	--	--	535
CHESTERFIELD COUNTY										
50J 10	373133077364701	300PRBG	06-28-99	--	--	--	950	950	200	362
52G 33	372059077210501	110QRNR	10-07-98	--	--	--	90	90	50	129
CRAIG COUNTY										
30J 1	373101080050601	341MLBR	08-26-99	--	--	--	180	180	120	1230
DINWIDDIE COUNTY										
49D 1	365924077441601		09-01-99	--	--	--	145	132	72	225
FAUQUIER COUNTY										
48S 20H	383207077485001	231BLBF	09-13-99	--	--	--	281	250	165	280
48S 37	383515077470201	220JRSC	09-13-99	--	--	--	500	440	400	325
48U 25	385211077513301	400MRHL	09-13-99	--	--	--	310	270	124	660

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- IFIER	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)
CAROLINE COUNTY--Continued									
51M 16	48	3.8	--	--	12.1	--	3.0	--	--
	53	4.8	--	--	13.8	--	2.7	--	--
	57	5.2	--	--	17.6	--	4.5	--	--
51M 17	72	5.8	--	--	15.8	--	1.5	--	--
	50	4.4	--	--	10.8	--	3.4	--	--
	77	5.9	--	--	13.4	--	1.7	--	--
	77	5.9	--	--	13.4	--	1.7	--	--
	82	6.9	--	--	17.7	--	1.3	--	--
51M 18	345	7.4	--	--	14.1	--	.2	--	--
	454	7.2	755	13.5	14.5	--	.1	1	--
	468	--	--	--	14.3	--	1.4	--	--
	431	--	--	--	18.1	--	--	--	--
51M 19	33	4.8	--	--	15.4	--	.5	--	--
	154	5.7	757	10.0	9.6	--	3.5	31	--
	42	--	--	--	15.7	--	--	--	--
	56	5.5	--	--	19.7	--	4.2	--	--
51M 20	227	4.3	--	7.2	17.2	--	5.2	--	--
	227	4.3	--	7.2	17.2	--	5.2	--	--
	212	4.5	757	8.0	11.7	--	5.0	46	--
	279	4.6	--	--	14.6	--	7.3	--	--
	241	4.6	--	--	18.6	--	6.7	--	--
51M 21	73	5.7	--	3.8	16.3	--	4.7	--	--
	64	5.3	755	9.0	12.3	--	3.5	33	--
	62	5.3	--	--	14.1	--	.6	--	--
	--	--	--	--	--	--	--	--	--
	109	5.3	--	--	17.0	--	1.7	--	--
51M 22	189	5.0	--	--	18.7	--	6.1	--	--
51M 23	176	4.9	--	--	19.1	--	2.5	--	--
CHARLOTTE COUNTY--Continued									
41E 1	127	5.8	744	25.1	15.6	--	5.6	58	41
41ES 1	109	5.2	744	19.8	14.7	--	7.3	73	18
CHESTERFIELD COUNTY--Continued									
50J 10	184	6.7	741	30.3	19.3	.2	.3	4	94
52G 33	70	4.6	761	19.8	17.2	.5	7.1	74	2
CRAIG COUNTY--Continued									
30J 1	216	6.9	721	21.8	14.1	--	6.1	62	114
DINWIDDIE COUNTY--Continued									
49D 1	905	6.7	751	20.1	16.5	--	.5	5	145
FAUQUIER COUNTY--Continued									
48S 20H	1310	7.2	754	21.3	15.0	--	.8	8	212
48S 37	669	7.5	750	29.8	15.8	--	.3	3	142
48U 25	643	6.6	741	25.6	13.6	--	4.3	43	170

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	NITRO- GEN, NITRITE DIS- SOLVED (MG/L AS N) (00613)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN, AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)
CAROLINE COUNTY--Continued									
51M 16	--	--	<.001	1.5	.006	<.1	.006	.002	--
	--	--	.001	1.9	.003	<.1	<.004	.001	--
	--	--	.004	2.2	.012	.1	E.003	.001	--
51M 17	--	--	.003	.034	.033	.2	.049	.009	--
	--	--	<.001	1.4	.008	.2	<.004	.008	--
	--	--	.003	.71	.046	.1	<.004	.003	--
	--	--	.003	.71	.048	E.07	<.004	.002	--
	--	--	.001	.23	.024	<.1	<.006	<.001	--
51M 18	--	--	<.001	.098	<.002	<.1	.038	.038	--
	--	--	.001	.028	.088	.2	.034	.027	--
	--	--	.001	.12	.004	<.1	.033	.031	--
	--	--	<.001	.37	.004	.1	.076	.059	--
51M 19	--	--	<.001	.031	<.002	<.1	.001	.001	--
	--	--	<.001	.031	.003	E.06	<.004	.001	--
	--	--	<.001	.091	.007	E.05	.004	.001	--
	--	--	<.001	.027	.0	<.1	<.006	<.001	--
51M 20	--	--	<.001	3.0	<.002	<.1	.001	.002	--
	--	--	<.001	3.0	<.002	<.1	.001	.001	--
	--	--	<.001	5.7	.002	E.07	<.004	.002	--
	--	--	.001	5.0	.005	E.08	<.004	.003	--
	--	--	<.001	4.7	<.002	<.1	<.006	<.001	--
51M 21	--	--	<.001	.64	.002	<.1	.003	.001	--
	--	--	<.001	.019	.006	E.07	<.004	.002	--
	--	--	<.001	.04	.004	<.1	<.004	.002	--
	--	--	<.001	<.005	<.002	<.1	E.004	.001	--
	--	--	<.001	.73	<.002	<.1	.010	<.001	--
51M 22	--	--	<.001	3.8	.007	<.1	<.006	<.001	--
51M 23	--	--	.002	5.2	.015	E.06	<.006	<.001	--
CHARLOTTE COUNTY--Continued									
41E 1	.0	34	--	2.6	--	--	--	--	.2
41ES 1	.0	15	--	2.9	--	--	--	--	.3
CHESTERFIELD COUNTY--Continued									
50J 10	.0	77	--	<.05	--	--	--	--	.2
52G 33	.0	1	--	4.1	--	--	--	--	.3
CRAIG COUNTY--Continued									
30J 1	.0	93	--	.59	--	--	--	--	.3
DINWIDDIE COUNTY--Continued									
49D 1	.0	119	--	<.05	--	--	--	--	.7
FAUQUIER COUNTY--Continued									
48S 20H	.0	174	--	.91	--	--	--	--	.6
48S 37	.0	116	--	.07	--	--	--	--	.4
48U 25	.0	139	--	<.05	--	--	--	--	1.2

E Estimated

< Actual value is known to be less than the value shown.

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	STATION	NUMBER	GEO- LOGIC UNIT	DATE	QUALITY ASSURANCE TYPE	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	DEPTH TO BOT- TOM OF SAMPLE INTER- VAL (FT) (72016)	DEPTH TO TOP OF SAMPLE INTER- VAL (FT) (72015)
FLOYD COUNTY									
28D 4	365439080190101		400GRGS	09-16-99	--	--	350	316	55
29E 1	370249080120801			09-16-99	--	--	200	--	--
29E 2	370246080120602			09-16-99	--	36.4	57	57	52
FLUVANNA COUNTY									
44L 1	374651078161601		360ODVC	08-23-99	--	--	505	400	68
44L 2	374610078172001		000MMPS	08-23-99	--	--	305	225	90
FRANKLIN COUNTY									
30D 1	365543080004901		400GRGS	07-20-99	--	--	330	300	100
GILES COUNTY									
24G 1	371938080491301		367KNOX	07-21-99	--	--	270	--	--
25G 1	372017080410701		3640DVCM	07-21-99	--	--	587	540	539
GOOCHLAND COUNTY									
49K 2	374159077445901		400GRGS	09-02-99	--	--	370	114	84
			400GRGS	09-02-99	REPLICATE	--	370	114	84
GREENSVILLE COUNTY									
50B 2	364409077303801		000MPVS	08-31-99	--	--	345	316	94
HENRICO COUNTY									
52HS 1	372615077175701		110QRNR	10-28-98	--	--	--	--	--
HIGHLAND COUNTY									
34R 1	382439079344801		341MLBR	08-12-99	--	--	360	341	340
ISLE OF WIGHT COUNTY									
57E 10 SOW 144B	370236076425901		211CRCSU	05-11-99	--	--	440.00	--	--
57E 14 SOW 144A	370253076431201		217PPSC	05-10-99	--	--	600.00	--	--
JAMES CITY COUNTY									
56H 26 SOW 177B	372506076511702		217PPSC	06-29-99	--	179.51	581.00	--	--
			217PPSC	06-29-99	REPLICATE	179.51	581.00	--	--
56H 27 SOW 177C	372506076511703		211CRCSU	06-21-99	--	173.98	401.00	--	--

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00300) (00301)
FLOYD COUNTY--Continued								
28D 4	2450	228	5.6	689	14.4	13.8	--	6.7 71
29E 1	2800	69	5.1	677	18.8	14.9	--	4.9 54
29E 2	2740	53	5.7	677	19.7	12.0	--	8.6 90
FLUVANNA COUNTY--Continued								
44L 1	355	192	7.0	749	25.1	14.7	--	4.2 42
44L 2	415	112	6.2	745	23.9	15.2	--	2.5 25
FRANKLIN COUNTY--Continued								
30D 1	1290	147	6.4	723	29.3	14.5	--	.7 8
GILES COUNTY--Continued								
24G 1	1590	346	7.5	718	22.8	13.9	--	7.8 81
25G 1	1835	497	7.1	712	27.4	13.6	--	9.1 93
GOOCHLAND COUNTY--Continued								
49K 2	360	128	6.3	747	23.8	15.4	--	.6 --
	360	128	6.3	747	23.8	15.4	--	.6 --
GREENSVILLE COUNTY--Continued								
50B 2	120	544	7.4	756	21.5	15.6	--	1.5 15
HENRICO COUNTY--Continued								
52HS 1	95.0	66	4.4	755	17.2	16.0	.2	3.9 40
HIGHLAND COUNTY--Continued								
34R 1	2880	334	7.3	683	27.2	12.8	--	.7 7
ISLE OF WIGHT COUNTY--Continued								
57E 10 SOW 144B	85.0	481	8.1	758	26.0	19.5	--	.0 0
57E 14 SOW 144A	86.0	384	8.1	756	27.0	19.8	--	.0 0
JAMES CITY COUNTY--Continued								
56H 26 SOW 177B	103	1050	8.1	749	31.0	19.8	--	.0 0
	103	1050	8.1	749	31.0	19.8	--	.0 0
56H 27 SOW 177C	103	682	7.7	759	--	18.7	--	.4 4

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)
FLOYD COUNTY--Continued									
28D 4	--	--	--	--	56	.0	46	--	--
29E 1	--	--	--	--	18	.0	15	--	--
29E 2	--	--	--	--	24	.0	19	--	--
FLUVANNA COUNTY--Continued									
44L 1	--	--	--	--	100	.0	82	--	--
44L 2	--	--	--	--	45	.0	37	--	--
FRANKLIN COUNTY--Continued									
30D 1	--	--	--	--	69	.0	57	--	--
GILES COUNTY--Continued									
24G 1	--	--	--	--	215	.0	176	--	--
25G 1	--	--	--	--	267	.0	219	--	--
GOOCHLAND COUNTY--Continued									
49K 2	--	--	--	--	57	.0	47	--	--
	--	--	--	--	57	.0	47	--	--
GREENSVILLE COUNTY--Continued									
50B 2	--	--	--	--	278	.0	228	--	--
HENRICO COUNTY--Continued									
52HS 1	--	--	--	--	.0	.0	.0	--	--
HIGHLAND COUNTY--Continued									
34R 1	--	--	--	--	163	.0	134	--	--
ISLE OF WIGHT COUNTY--Continued									
57E 10 SOW 144B	1.2	.18	110	3.3	289	.0	237	2.6	2.5
57E 14 SOW 144A	.64	.10	96	1.8	242	.0	198	.8	.9
JAMES CITY COUNTY--Continued									
56H 26 SOW 177B	3.1	1.0	240	6.9	450	.0	369	19	82
	3.2	1.0	240	7.2	450	.0	369	19	81
56H 27 SOW 177C	3.3	.75	150	8.4	332	.0	272	11	13

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	BROMIDE DIS- SOLVED (MG/L AS BR) (71870)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)
FLOYD COUNTY--Continued									
28D 4	--	--	--	--	--	3.5	--	--	.3
29E 1	--	--	--	--	--	--	--	--	.2
29E 2	--	--	--	--	--	--	--	--	1.6
FLUVANNA COUNTY--Continued									
44L 1	--	--	--	--	--	<.05	--	--	.2
44L 2	--	--	--	--	--	<.05	--	--	.1
FRANKLIN COUNTY--Continued									
30D 1	--	--	--	--	--	<.05	--	--	.5
GILES COUNTY--Continued									
24G 1	--	--	--	--	--	2.7	--	--	.3
25G 1	--	--	--	--	--	4.8	--	--	.6
GOOCHLAND COUNTY--Continued									
49K 2	--	--	--	--	--	<.05	--	--	.2
	--	--	--	--	--	<.05	--	--	.2
GREENSVILLE COUNTY--Continued									
50B 2	--	--	--	--	--	<.05	--	--	1.4
HENRICO COUNTY--Continued									
52HS 1	--	--	--	--	--	2.9	--	--	.2
HIGHLAND COUNTY--Continued									
34R 1	--	--	--	--	--	<.05	--	--	.5
ISLE OF WIGHT COUNTY--Continued									
57E 10 SOW 144B	2.0	.02	24	320	292	--	99	--	--
57E 14 SOW 144A	2.0	.02	32	260	254	--	310	8	--
JAMES CITY COUNTY--Continued									
56H 26 SOW 177B	2.5	.34	34	663	611	--	47	11	--
	2.5	.32	34	664	609	--	43	10	--
56H 27 SOW 177C	2.3	.09	30	450	386	--	E8	9	--

< Actual value is known to be less than the value shown.

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	STATION	NUMBER	GEO- LOGIC UNIT	DATE	QUALITY ASSURANCE TYPE	DEPTH OF WELL, TOTAL (FEET) (72008)	DEPTH TO BOT- TOM OF SAMPLE INTER- VAL (FT) (72016)	DEPTH TO TOP OF SAMPLE INTER- VAL (FT) (72015)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)
KING AND QUEEN COUNTY									
57H 23	372823076433601	124EOCN	10-01-98	--	208	208	190	6.0	
LANCASTER COUNTY									
59K 1 SOW 015	374249076230101	211CRCSU	12-08-98	--	716.00	--	--	90.0	
		211CRCSU	05-14-99	--	716.00	--	--	90.0	
		211CRCSU	05-14-99	REPLICATE	716.00	--	--	90.0	
59K 21	374244076224401	211CRCSU	12-08-98	--	730.00	--	--	90.0	
		211CRCSU	06-18-99	--	730.00	--	--	90.0	
LOUDOUN COUNTY									
49V 91	385814077440501	400MRHL	09-14-99	--	685	645	100	490	
LOUISA COUNTY									
47N 5	380046077531801	000AARF	09-02-99	--	211	211	98	439	
47NS 1	380124077524801	000AARF	09-02-99	--	--	--	--	360	
MECKLENBURG COUNTY									
43C 1	364917078275401	000MPVS	06-30-99	--	385	360	123	558	
MIDDLESEX COUNTY									
59J 6	373201076261201	124EOCN	12-11-98	--	461.00	--	--	56.0	
59J 12	373304076261701	121CSPKU	10-27-98	--	104	104	84	65.0	
NELSON COUNTY									
39M 3	375530078572101	400CTCN	07-20-99	--	335	68	268	3440	
NOTTOWAY COUNTY									
45F 1	371054078114201	000GRNT	08-30-99	--	--	--	--	480	
PAGE COUNTY									
42R 1	382843078363101	371CCCG	07-08-99	--	660	649	648	1070	
42R 2	382920078361101	371CCCG	07-06-99	--	500	369	368	1168	
42R 3	382901078363101	371CCCG	07-08-99	--	460	366	186	1070	
42S 2	383400078303901	377ROME	07-06-99	--	632	578	526	1175	
42S 3	383500078300501	371CCCG	07-09-99	--	482	467	461	1050	
42S 4	383403078303601	377ROME	07-09-99	--	490	490	333	1140	
43S 17	383447078293201	371ELBK	07-09-99	--	372	350	195	1070	
43S 19	383602078291501	371CCCG	07-09-99	--	300	300	203	970	

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED OXYGEN, DIS- SOLVED (MG/L) (00300)	OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)
KING AND QUEEN COUNTY--Continued									
57H 23	501	8.7	751	24.0	16.9	.3	.2	2	--
LANCASTER COUNTY--Continued									
59K 1 SOW 015	724	8.8	752	20.0	19.6	--	.2	2	2.2
	688	8.6	755	15.0	19.3	--	--	--	2.2
	688	8.6	755	15.0	19.3	--	--	--	2.2
59K 21	809	8.6	755	18.0	21.5	--	.1	1	.57
	798	8.2	760	25.0	21.7	--	1.1	12	.55
LOUDOUN COUNTY--Continued									
49V 91	376	6.9	745	20.4	14.8	--	.3	3	--
LOUISA COUNTY--Continued									
47N 5	67	5.8	747	22.4	14.6	--	6.9	70	--
47NS 1	55	5.7	748	21.4	13.7	--	8.0	78	--
MECKLENBURG COUNTY--Continued									
43C 1	196	6.8	739	22.7	16.1	.4	1.8	19	--
MIDDLESEX COUNTY--Continued									
59J 6	1800	8.3	760	10.0	18.8	--	.0	0	3.8
59J 12	343	7.4	763	18.3	16.9	.1	.3	3	--
NELSON COUNTY--Continued									
39M 3	64	6.0	672	22.3	11.1	--	9.6	99	--
NOTTOWAY COUNTY--Continued									
45F 1	245	6.4	744	19.6	15.6	--	7.8	80	--
PAGE COUNTY--Continued									
42R 1	294	7.4	727	32.6	12.3	--	6.3	62	--
42R 2	343	7.5	724	27.6	13.4	.0	7.4	75	--
42R 3	302	7.3	728	34.1	12.0	--	7.3	71	--
42S 2	241	7.8	725	31.9	15.3	.6	7.7	81	--
42S 3	285	7.5	729	25.4	15.4	--	5.7	59	--
42S 4	235	7.7	724	29.7	12.9	--	7.4	73	--
43S 17	313	7.6	727	34.3	13.7	--	6.1	62	--
43S 19	249	7.8	730	38	14.1	--	7.0	71	--

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE WATER DIS IT FIELD (MG/L AS HCO3 (00453)	CAR- BONATE WATER DIS IT FIELD (MG/L AS CO3 (00452)	ALKA- LINITY WAT DIS TOT IT FIELD (MG/L AS CACO3 (39086)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)
KING AND QUEEN COUNTY--Continued									
57H 23	--	--	--	283	18	232	--	--	--
LANCASTER COUNTY--Continued									
59K 1 SOW 015	.79	160	8.2	390	23	357	10	2.5	--
	.84	170	8.3	395	9	339	11	3.2	2.7
	.84	170	8.3	395	9	339	11	3.2	2.7
59K 21	.25	190	4.9	447	7	378	23	3.4	--
	.25	180	4.6	424	.0	348	24	3.6	3.3
LOUDOUN COUNTY--Continued									
49V 91	--	--	--	149	.0	122	--	--	--
LOUISA COUNTY--Continued									
47N 5	--	--	--	30	.0	25	--	--	--
47NS 1	--	--	--	28	.0	23	--	--	--
MECKLENBURG COUNTY--Continued									
43C 1	--	--	--	100	.0	82	--	--	--
MIDDLESEX COUNTY--Continued									
59J 6	2.1	380	14	791	.0	648	6.8	170	2.1
59J 12	--	--	--	182	.0	149	--	--	--
NELSON COUNTY--Continued									
39M 3	--	--	--	24	.0	20	--	--	--
NOTTOWAY COUNTY--Continued									
45F 1	--	--	--	98	.0	80	--	--	--
PAGE COUNTY--Continued									
42R 1	--	--	--	200	.0	164	--	--	--
42R 2	--	--	--	216	.0	177	--	--	--
42R 3	--	--	--	205	.0	168	--	--	--
42S 2	--	--	--	158	.0	130	--	--	--
42S 3	--	--	--	162	.0	133	--	--	--
42S 4	--	--	--	144	.0	118	--	--	--
43S 17	--	--	--	164	.0	134	--	--	--
43S 19	--	--	--	134	.0	110	--	--	--

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	BROMIDE DIS- SOLVED (MG/L AS BR) (71870)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)
KING AND QUEEN COUNTY--Continued								
57H 23	--	--	--	--	.08	--	--	.8
LANCASTER COUNTY--Continued								
59K 1 SOW 015	--	21	418	424	--	50	E2	--
	.04	21	--	420	--	44	E3	--
	.03	21	459	420	--	45	3	--
59K 21	--	12	--	456	--	<10	8	--
	.06	12	498	440	--	E5	7	--
LOUDOUN COUNTY--Continued								
49V 91	--	--	--	--	.14	--	--	.5
LOUISA COUNTY--Continued								
47N 5	--	--	--	--	.62	--	--	.2
47NS 1	--	--	--	--	.37	--	--	.2
MECKLENBURG COUNTY--Continued								
43C 1	--	--	--	--	.15	--	--	.2
MIDDLESEX COUNTY--Continued								
59J 6	.73	41	1060	1010	--	18	<4	--
59J 12	--	--	--	--	.05	--	--	.1
NELSON COUNTY--Continued								
39M 3	--	--	--	--	.30	--	--	.2
NOTTOWAY COUNTY--Continued								
45F 1	--	--	--	--	.70	--	--	.5
PAGE COUNTY--Continued								
42R 1	--	--	--	--	--	--	--	.4
42R 2	--	--	--	--	.75	--	--	.5
42R 3	--	--	--	--	--	--	--	.4
42S 2	--	--	--	--	<.05	--	--	.3
42S 3	--	--	--	--	--	--	--	.3
42S 4	--	--	--	--	--	--	--	.3
43S 17	--	--	--	--	--	--	--	.4
43S 19	--	--	--	--	--	--	--	.2

< Actual value is known to be less than the value shown.

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	STATION	NUMBER	GEO- LOGIC UNIT	DATE	QUALITY ASSURANCE TYPE	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	DEPTH TO BOT- TOM OF SAMPLE INTER- VAL (FT) (72016)	DEPTH TO TOP OF SAMPLE INTER- VAL (FT) (72015)
PITTSYLVANIA COUNTY									
35C 1	365110079224301	400GRGS	06-29-99	--	69.5	425	374	135	
PRINCE EDWARD COUNTY									
43F 1	371439078275101	000GRGS	07-01-99	--	--	528	--	--	
PRINCE GEORGE COUNTY									
52G 32	371554077210501	110QRNR	10-06-98	--	--	95	80	70	
ROANOKE COUNTY									
31G 2	371611079535201	000GRNT	08-26-99	--	--	625	335	320	
ROCKBRIDGE COUNTY									
35J 2	373715079290101	377CHLH	08-24-99	--	--	610	--	610	
35K 2	373800079264501	377SHDY	07-08-99	--	--	317	317	172	
37M 4	375541079123501	371CCCG	08-24-99	--	--	300	--	--	
ROCKINGHAM COUNTY									
39RS 1	382948078575301		11-10-98	--	--	--	--	--	
39SS 1	383216078572801		11-09-98	--	--	--	--	--	
			11-09-98	REPLICATE	--	--	--	--	
			02-02-99	--	--	--	--	--	
			03-18-99	--	--	--	--	--	
			04-19-99	--	--	--	--	--	
			06-08-99	--	--	--	--	--	
			06-30-99	--	--	--	--	--	
			08-11-99	--	--	--	--	--	
			09-20-99	--	--	--	--	--	
39SS 2	383234078553201		11-09-98	--	--	--	--	--	
39SS 3	383136078563401		11-09-98	--	--	--	--	--	
39SS 4	383255078561901		11-10-98	--	--	--	--	--	
SHENANDOAH COUNTY									
40U 1	384854078455201	341CMNG	08-11-99	--	--	385	375	110	
43V 3	385729078271401	371CCCG	08-11-99	--	--	300	--	--	
SOUTHAMPTON COUNTY									
55A 3 SOW 086	363632076580101	217PTXN	03-31-99	--	157.09	745.00	--	--	
55A 4	363540076560001		10-05-98	--	--	182	182	172	

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	PH WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	BARO- METRIC PRES- SURE (MM OF HG) (00025)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)
PITTSYLVANIA COUNTY--Continued								
35C 1	775	141	6.4	729	29.5	15.4	.9	.3
PRINCE EDWARD COUNTY--Continued								
43F 1	500	160	6.2	745	25	14.4	.9	.3
PRINCE GEORGE COUNTY--Continued								
52G 32	113	36	5.1	763	18.2	17.4	.3	6.4
ROANOKE COUNTY--Continued								
31G 2	935	972	7.5	730	23.1	17.5	--	.4
ROCKBRIDGE COUNTY--Continued								
35J 2	875	254	7.5	735	22.6	13.2	--	4.2
35K 2	725	301	7.3	738	24.2	15.0	--	2.8
37M 4	1730	482	7.0	712	25.1	13.3	--	6.4
ROCKINGHAM COUNTY--Continued								
39RS 1	1420	408	7.0	--	--	12.2	--	7.2
39SS 1	1610	341	7.3	--	--	11.7	--	4.2
	1610	341	7.3	--	--	11.7	--	4.2
	1610	313	7.2	714	10.1	11.4	--	6.8
	1610	257	7.1	714	11.4	11.2	--	8.5
	1610	246	7.2	718	9.5	11.1	--	7.3
	1610	317	7.1	715	21.0	11.3	--	6.8
	1610	313	6.9	718	19.0	11.5	--	5.2
	1610	336	7.3	719	19.4	11.6	--	--
	1610	333	7.3	715	15.4	11.9	--	5.8
39SS 2	1560	394	7.3	--	--	12.9	--	6.8
39SS 3	1480	379	7.2	--	--	12.7	--	6.6
39SS 4	1600	382	6.8	--	--	12.5	--	5.5
SHENANDOAH COUNTY--Continued								
40U 1	1455	269	7.0	714	30.6	12.8	--	1.1
43V 3	785	531	6.8	730	34.5	13.1	--	4.5
SOUTHAMPTON COUNTY--Continued								
55A 3 SOW 086	18.0	2810	7.6	765	23.5	21.0	--	.1
55A 4	25.0	912	8.1	763	19.6	17.4	.2	.3

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER		OXYGEN, DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKA- LITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)
PITTSYLVANIA COUNTY--Continued									
35C	1	3	--	--	--	--	79	.0	64
PRINCE EDWARD COUNTY--Continued									
43F	1	3	--	--	--	--	74	.0	60
PRINCE GEORGE COUNTY--Continued									
52G	32	67	--	--	--	--	2	.0	2
ROANOKE COUNTY--Continued									
31G	2	5	--	--	--	--	111	.0	91
ROCKBRIDGE COUNTY--Continued									
35J	2	41	--	--	--	--	159	.0	130
35K	2	28	--	--	--	--	177	.0	146
37M	4	66	--	--	--	--	302	.0	248
ROCKINGHAM COUNTY--Continued									
39RS	1	--	--	--	--	--	--	--	--
39SS	1	--	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--
		62	--	--	--	--	--	--	--
		77.7	--	--	--	--	--	--	--
		66.7	--	--	--	--	--	--	--
		62	--	--	--	--	--	--	--
		48.1	--	--	--	--	--	--	--
		--	--	--	--	--	--	--	--
		54.3	--	--	--	--	--	--	--
39SS	2	--	--	--	--	--	--	--	--
39SS	3	--	--	--	--	--	--	--	--
39SS	4	--	--	--	--	--	--	--	--
SHENANDOAH COUNTY--Continued									
40U	1	11	--	--	--	--	158	.0	130
43V	3	45	--	--	--	--	324	.0	266
SOUTHAMPTON COUNTY--Continued									
55A	3 SOW 086	1	3.8	3.9	610	19	536	.0	439
55A	4	3	--	--	--	--	339	.0	278

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER		SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	BROMIDE DIS- SOLVED (MG/L AS BR) (71870)	SILICA, DIS- SOLVED (MG/L AS SIO2) (00955)	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L (70300)	SOLIDS, SUM OF CONSTI- TUENTS, DIS- SOLVED (MG/L (70301)	NITRO- GEN, DIS- SOLVED (MG/L AS N) (00613)
PITTSYLVANIA COUNTY--Continued									
35C	1	--	--	--	--	--	--	--	--
PRINCE EDWARD COUNTY--Continued									
43F	1	--	--	--	--	--	--	--	--
PRINCE GEORGE COUNTY--Continued									
52G	32	--	--	--	--	--	--	--	--
ROANOKE COUNTY--Continued									
31G	2	--	--	--	--	--	--	--	--
ROCKBRIDGE COUNTY--Continued									
35J	2	--	--	--	--	--	--	--	--
35K	2	--	--	--	--	--	--	--	--
37M	4	--	--	--	--	--	--	--	--
ROCKINGHAM COUNTY--Continued									
39RS	1	--	--	--	--	--	--	--	.01
39SS	1	--	--	--	--	--	--	--	.01
		--	--	--	--	--	--	--	.01
		--	--	--	--	--	--	--	<.01
		--	--	--	--	--	--	--	<.01
		--	--	--	--	--	--	--	<.01
		--	--	--	--	--	--	--	<.01
		--	--	--	--	--	--	--	<.01
		--	--	--	--	--	--	--	<.01
		--	--	--	--	--	--	--	<.01
39SS	2	--	--	--	--	--	--	--	.01
39SS	3	--	--	--	--	--	--	--	.01
39SS	4	--	--	--	--	--	--	--	.01
SHENANDOAH COUNTY--Continued									
40U	1	--	--	--	--	--	--	--	--
43V	3	--	--	--	--	--	--	--	--
SOUTHAMPTON COUNTY--Continued									
55A	3 SOW 086	300	430	1.1	1.7	31	1670	1670	--
55A	4	--	--	--	--	--	--	--	--

< Actual value is known to be less than the value shown.

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER		NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC DIS. (MG/L AS N) (00623)	PHOS- PHORUS DIS- SOLVED (MG/L AS P) (00666)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L AS P) (00671)	IRON, DIS- SOLVED (UG/L AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C) (00681)
PITTSYLVANIA COUNTY--Continued									
35C	1	<.05	--	--	--	--	--	--	.2
PRINCE EDWARD COUNTY--Continued									
43F	1	<.05	--	--	--	--	--	--	.3
PRINCE GEORGE COUNTY--Continued									
52G	32	1.7	--	--	--	--	--	--	.2
ROANOKE COUNTY--Continued									
31G	2	<.05	--	--	--	--	--	--	.5
ROCKBRIDGE COUNTY--Continued									
35J	2	.75	--	--	--	--	--	--	.3
35K	2	.57	--	--	--	--	--	--	.6
37M	4	2.8	--	--	--	--	--	--	.6
ROCKINGHAM COUNTY--Continued									
39RS	1	4.7	.05	<.1	<.05	.02	--	--	--
39SS	1	2.3	.04	<.1	.01	.03	--	--	--
		2.3	.05	<.1	<.05	.03	--	--	--
		2.7	<.02	E.06	<.05	.03	--	--	--
		4.7	<.02	.3	E.03	.04	--	--	--
		1.8	<.02	<.1	<.05	.01	--	--	--
		2.2	<.02	E.07	<.05	.01	--	--	--
		2.2	<.02	E.06	<.05	.01	--	--	--
		2.1	<.02	<.1	<.05	.01	--	--	--
		2.9	<.02	.1	<.05	.02	--	--	--
39SS	2	4.0	.05	<.1	<.05	.02	--	--	--
39SS	3	3.4	.04	<.1	<.05	.02	--	--	--
39SS	4	1.3	.05	<.1	<.05	.02	--	--	--
SHENANDOAH COUNTY--Continued									
40U	1	<.05	--	--	--	--	--	--	.7
43V	3	3.4	--	--	--	--	--	--	.7
SOUTHAMPTON COUNTY--Continued									
55A	3 SOW 086	--	--	--	--	--	3800	160	--
55A	4	<.05	--	--	--	--	--	--	.5

E Estimated

< Actual value is known to be less than the value shown.

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	STATION	NUMBER	GEO- LOGIC UNIT	DATE	QUALITY ASSURANCE TYPE	DEPTH BELOW LAND SURFACE (WATER LEVEL) (FEET) (72019)	DEPTH OF WELL, TOTAL (FEET) (72008)	DEPTH TO BOT- TOM OF SAMPLE INTER- VAL (FT) (72016)	DEPTH TO TOP OF SAMPLE INTER- VAL (FT) (72015)	ELEV. OF LAND SURFACE DATUM (FT. ABOVE NGVD) (72000)
SURREY COUNTY										
55F 21	371322076570801	217PPSC	10-06-98	--	--	385	380	308	95.0	
WASHINGTON COUNTY										
17BS 1	363748081423201	377SHDY	07-22-99	--	--	--	--	--	2440	
CITY OF CHESAPEAKE										
60A 21	363351076152601	110QRNR	10-05-98	--	--	69	69	54	22.0	
61A 19	363527076112001	217PPSC	03-17-99	--	58.0	1294.00	--	--	11.0	
CITY OF FRANKLIN										
55B 65 SOW 145B	364033076562602	217PTXN	04-15-99	--	--	734.00	--	--	34.0	
55B 67 SOW 145D	364033076562604	125PLCN	04-13-99	--	--	140.00	--	--	34.0	
CITY OF NEWPORT NEWS										
58F 1 SOW 002	371027076335601	211CRCSU	06-24-99	--	109.54	443.00	--	--	20.0	
58F 50 SOW 171A	371208076341101	217PTXN	06-15-99	--	142.29	1236.00	--	--	55.0	
58F 51 SOW 171B	371208076341102	217PPSC	06-16-99	--	145.90	851.00	--	--	55.0	
58F 52 SOW 171C	371208076341103	211CRCSU	06-17-99	--	146.12	537.00	--	--	55.0	
58F 89	371041076351703	217PPSC	11-04-98	--	--	1131	1130	1020	30.0	
		217PPSC	11-04-98	REPLICATE	--	1131	1130	1020	30.0	
CITY OF SUFFOLK										
56A 10 SOW 088A	363345076470201	217PTXN	05-13-99	--	--	1081.00	--	--	45.0	
56A 12 SOW 088B	363345076470202	217PPSC	03-19-99	--	141.82	601.00	--	--	45.0	
CITY OF VIRGINIA BEACH										
62B 8	364401076003801		05-13-99	--	10.71	132.00	--	--	8.8	
62B 9	364352076005401		05-14-99	--	6.77	67.00	--	--	10.7	
62C 11 SOW 172C	364745076004303		05-10-99	--	6.96	35.0	--	--	20.0	
63C 11	364728075591401		05-12-99	--	6.60	85.00	--	--	9.1	
CITY OF WAYNESBORO										
39N 2	380311078541401	377ROME	07-07-99	--	--	432	400	191	1345	
		377ROME	07-07-99	REPLICATE	--	432	400	191	1345	

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	SPE- CIFIC CON- DUCT- ANCE (US/CM) (00095)	WATER WHOLE FIELD (STAND- ARD UNITS) (00400)	METRIC PRES- SURE OF HG) (00025)	TEMPER- ATURE AIR (DEG C) (00020)	TEMPER- ATURE WATER (DEG C) (00010)	TUR- BID- ITY (NTU) (00076)	OXYGEN, DIS- SOLVED (MG/L) (00300)	DIS- SOLVED (PER- CENT SATUR- ATION) (00301)	CALCIUM DIS- SOLVED (MG/L AS CA) (00915)	MAGNE- SIUM, DIS- SOLVED (MG/L AS MG) (00925)
SURREY COUNTY--Continued										
55F 21	382	8.0	763	20.7	18.2	.2	.3	3	--	--
WASHINGTON COUNTY--Continued										
17BS 1	98	8.4	699	26.3	12.8	--	9.1	94	--	--
CITY OF CHESAPEAKE--Continued										
60A 21	292	7.5	764	22.6	15.7	.4	.2	2	--	--
61A 19	10780	7.5	755	24.0	22.4	--	.4	5	50	35
CITY OF FRANKLIN--Continued										
55B 65 SOW 145B	1799	7.8	753	18.0	20.5	--	.0	0	1.9	1.5
55B 67 SOW 145D	313	8.0	755	18.0	17.2	--	.3	3	2.8	1.6
CITY OF NEWPORT NEWS--Continued										
58F 1 SOW 002	3060	8.5	758	26.0	19.4	--	.9	10	2.9	2.5
58F 50 SOW 171A	8480	7.7	754	22.0	20.9	--	.0	0	47	16
58F 51 SOW 171B	4840	7.3	756	19.0	20.9	--	.0	0	20	7.1
58F 52 SOW 171C	2460	8.0	755	19.0	19.8	--	.4	4	5.0	2.5
58F 89	6230	7.4	753	13.8	24.9	.4	.2	3	--	--
	6230	7.4	753	13.8	24.9	.4	.2	3	--	--
CITY OF SUFFOLK--Continued										
56A 10 SOW 088A	7570	7.1	751	26.0	20.4	--	.0	0	33	27
56A 12 SOW 088B	1080	8.6	758	--	21.1	--	2.0	23	1.3	1.1
CITY OF VIRGINIA BEACH--Continued										
62B 8	339	7.6	755	--	15.8	--	.2	2	30	12
62B 9	192	6.8	760	14.3	15.7	--	.2	2	25	5.7
62C 11 SOW 172C	256	6.8	762	24.2	16.4	--	.3	3	25	4.3
63C 11	256	7.5	762	--	15.3	--	.3	3	30	3.4
CITY OF WAYNESBORO--Continued										
39N 2	132	7.8	721	31.4	13.2	.1	6.9	70	--	--
	132	7.8	721	31.4	13.2	.1	6.9	70	--	--

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	SODIUM, DIS- SOLVED (MG/L AS NA) (00930)	POTAS- SIUM, DIS- SOLVED (MG/L AS K) (00935)	BICAR- BONATE WATER DIS IT FIELD MG/L AS HCO3 (00453)	CAR- BONATE WATER DIS IT FIELD MG/L AS CO3 (00452)	ALKA- LINITY WAT DIS TOT IT FIELD MG/L AS CACO3 (39086)	SULFATE DIS- SOLVED (MG/L AS SO4) (00945)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL) (00940)	FLUO- RIDE, DIS- SOLVED (MG/L AS F) (00950)	BROMIDE DIS- SOLVED (MG/L AS BR) (71870)	SILICA, DIS- SOLVED (MG/L AS SiO2) (00955)
SURRY COUNTY--Continued										
55F 21	--	--	239	.0	196	--	--	--	--	--
WASHINGTON COUNTY--Continued										
17BS 1	--	--	62	.0	51	--	--	--	--	--
CITY OF CHESAPEAKE--Continued										
60A 21	--	--	116	.0	95	--	--	--	--	--
61A 19	2300	4.3	393	.0	322	150	3200	.5	10	13
CITY OF FRANKLIN--Continued										
55B 65 SOW 145B	380	10	395	.0	324	170	220	.8	.86	22
55B 67 SOW 145D	65	10	179	.0	147	7.5	2.9	.9	.03	20
CITY OF NEWPORT NEWS--Continued										
58F 1 SOW 002	640	51	392	.0	321	59	690	2.3	2.5	11
58F 50 SOW 171A	1700	25	248	.0	203	150	2600	.7	9.9	20
58F 51 SOW 171B	1000	51	306	.0	251	74	1300	1.2	4.8	37
58F 52 SOW 171C	530	4.7	404	.0	331	58	510	2.3	1.8	15
58F 89	--	--	317	.0	260	--	--	--	--	--
	--	--	320	.0	260	--	--	--	--	--
CITY OF SUFFOLK--Continued										
56A 10 SOW 088A	1800	35	500	.0	410	570	2000	.3	12	43
56A 12 SOW 088B	250	9.3	549	29	498	11	35	3.6	.14	7.2
CITY OF VIRGINIA BEACH--Continued										
62B 8	16	9.7	--	--	134	<.1	17	.2	.05	25
62B 9	9.5	1.2	--	--	87	1.6	12	.1	.07	24
62C 11 SOW 172C	14	1.3	--	--	67	9.1	13	.1	.26	41
63C 11	11	1.6	--	--	77	.2	12	.2	.03	40
CITY OF WAYNESBORO--Continued										
39N 2	--	--	77	.0	63	--	--	--	--	--
	--	--	77	.0	63	--	--	--	--	--

< Actual value is known to be less than the value shown.

QUALITY OF GROUND WATER

WATER QUALITY DATA, WATER YEAR OCTOBER 1998 TO SEPTEMBER 1999

LOCAL IDENT- I- FIER	SOLIDS, RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L) (70300)	SOLIDS, SUM OF CONSTITUENTS, DIS- SOLVED (MG/L) (70301)	NITRO- GEN, NO2+NO3 DIS- SOLVED (MG/L) AS N) (00631)	NITRO- GEN, AMMONIA DIS- SOLVED (MG/L) AS N) (00608)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L) AS N) (00625)	PHOS- PHORUS TOTAL (MG/L) AS P) (00665)	PHOS- PHORUS ORTHO, DIS- SOLVED (MG/L) AS P) (00671)	IRON, DIS- SOLVED (UG/L) AS FE) (01046)	MANGA- NESE, DIS- SOLVED (UG/L) AS MN) (01056)	CARBON, ORGANIC DIS- SOLVED (MG/L) AS C) (00681)
SURRY COUNTY--Continued										
55F 21	--	--	<.05	--	--	--	--	--	--	.6
WASHINGTON COUNTY--Continued										
17BS 1	--	--	.08	--	--	--	--	--	--	.3
CITY OF CHESAPEAKE--Continued										
60A 21	--	--	<.05	--	--	--	--	--	--	.5
61A 19	5910	5940	--	--	--	--	--	440	8	--
CITY OF FRANKLIN--Continued										
55B 65 SOW 145B	1070	1010	--	--	--	--	--	130	96	--
55B 67 SOW 145D	208	199	--	--	--	--	--	<10	E2	--
CITY OF NEWPORT NEWS--Continued										
58F 1 SOW 002	1720	1650	--	--	--	--	--	120	28	--
58F 50 SOW 171A	4660	4660	--	--	--	--	--	1400	120	--
58F 51 SOW 171B	2630	2690	--	--	--	--	--	830	47	--
58F 52 SOW 171C	1380	1320	--	--	--	--	--	120	10	--
58F 89	--	--	<.05	--	--	--	--	--	--	<.1
	--	--	<.05	--	--	--	--	--	--	.3
CITY OF SUFFOLK--Continued										
56A 10 SOW 088A	4840	4860	--	--	--	--	--	8900	230	--
56A 12 SOW 088B	642	615	--	--	--	--	--	20	10	--
CITY OF VIRGINIA BEACH--Continued										
62B 8	198	--	.005	.279	.3	.066	.063	130	4	1.3
62B 9	146	137	.005	.105	.2	.068	.003	4300	160	.6
62C 11 SOW 172C	172	156	.008	.223	.3	.16	.082	5400	200	1.3
63C 11	165	148	<.005	.540	.5	.39	.26	1100	97	1.2
CITY OF WAYNESBORO--Continued										
39N 2	--	--	.45	--	--	--	--	--	--	.2
	--	--	.45	--	--	--	--	--	--	.2

< Actual value is known to be less than the value shown.

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Well 55P 5	293	
Well 55P 9	294	
Well 56N 1 SOW 016	295	
Wet mass, definition of	11	
WSP (Water-Supply Paper), definition of	17	

Y

YORK COUNTY:	
Well 57G 17 SOW 068	296
Well 58F 62 SOW 187A	297
Well 58F 63 SOW 187B	298
Well 58F 65 SOW 191A	299
Well 59F 1 SOW 027	300
Well 59F 72 SOW 184A	301
Well 59F 73 SOW 184B	302
Well 59F 74 SOW 184C	303
Well 59F 76 SOW 185A	304
Well 59F 77 SOW 185B	305
Well 59F 78 SOW 185C	306
Well 59F 79 SOW 185D	307
Well 59F 81 SOW 186A	308
Well 59F 86 SOW 188A	309
Well 59F 89 SOW 189A	310
Well 59F 96 SOW 189B	311
Well 59F 99 SOW 190B	312

Z

Zooplankton, definition of	14
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CONVERSION FACTORS AND VERTICAL DATUM

Multiply	By	To obtain
<i>Length</i>		
inch (in.)	2.54×10^1	millimeter
	2.54×10^{-2}	meter
foot (ft)	3.048×10^{-1}	meter
mile (mi)	1.609×10^0	kilometer
<i>Area</i>		
acre	4.047×10^3	square meter
	4.047×10^{-1}	square hectometer
	4.047×10^{-3}	square kilometer
square mile (mi ²)	2.590×10^0	square kilometer
<i>Volume</i>		
gallon (gal)	3.785×10^0	liter
	3.785×10^0	cubic decimeter
	3.785×10^{-3}	cubic meter
million gallons (Mgal)	3.785×10^3	cubic meter
	3.785×10^{-3}	cubic hectometer
cubic foot (ft ³)	2.832×10^1	cubic decimeter
	2.832×10^{-2}	cubic meter
cubic-foot-per-second day [(ft ³ /s) d]	2.447×10^3	cubic meter
	2.447×10^{-3}	cubic hectometer
acre-foot (acre-ft)	1.233×10^3	cubic meter
	1.233×10^{-3}	cubic hectometer
	1.233×10^{-6}	cubic kilometer
<i>Flow</i>		
cubic foot per second (ft ³ /s)	2.832×10^1	liter per second
	2.832×10^1	cubic decimeter per second
	2.832×10^{-2}	cubic meter per second
gallon per minute (gal/min)	6.309×10^{-2}	liter per second
	6.309×10^{-2}	cubic decimeter per second
	6.309×10^{-5}	cubic meter per second
million gallons per day (Mgal/d)	4.381×10^1	cubic decimeter per second
	4.381×10^{-2}	cubic meter per second
<i>Mass</i>		
ton (short)	9.072×10^{-1}	megagram or metric ton

Sea level: In this report “sea level” refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)—a geodetic datum derived from a general adjustment for the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

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